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Solo Recital: Sunday, February 8, 2015, 5:30 p.m., Recital Hall. *Sur Les Cimes for Horn and Piano* (Eugene Bozza); *Concerto for Horn and Orchestra* (Lee Actor); *Choro chorado* (Geraldo Silva, arr. by Paul Basler); *Lo Mismo* (Felix del Rosario, arr. by Paul Basler); *Penumbra for Horn and Piano* (James Naigus); *Trio for Clarinet, Horn, and Piano, op. 274* (Carl Reinecke).

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D.M.A. Research Project. PROGRESSIVE HARMONIC SERIES EXERCISES IN HIGH RANGE EXPANSION FOR BEGINNING HORN PLAYERS (2016). Upper range expansion is one of the most challenging parts of beginning study on the horn. The means in which higher pitches are introduced through horn methods or wind band studies are accompanied by a multitude of additional technical skills for students to practice.

Although these introductions of notes occur in step-wise motion, upward extension is rushed, with new notes instituted frequently with few written exercises to rehearse new pitches. As a result, young students struggle with performing in the upper range required by music studied in methods or wind band classes.

The goal of this project was to develop a progressive series of exercises to allow more accessible performance in the high range of the horn through implementation of etudes in all harmonic series. Concepts are introduced sequentially, allowing the student to perform exercises that ascend in range and enabling practice in high range expansion by transposition of exercises to higher harmonic series. Constructed with a duet part, a teacher or peer can perform alongside the student on each etude to provide engagement for the student with counterpoint. Each exercise includes commentary regarding the goals and challenges of the musical content.

PROGRESSIVE HARMONIC SERIES EXERCISES
IN HIGH RANGE EXPANSION FOR
BEGINNING HORN PLAYERS

by

Andrew Timothy Phillips

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TABLE OF CONTENTS

	Page
LIST OF FIGURES	vii
 CHAPTER	
I. INTRODUCTION	1
Methods for Beginning Horn Players	1
Purpose.....	4
Related Literature.....	5
Procedure	8
Limitations	10
Definitions.....	10
II. EXAMINING FIRST NOTES AND UPWARD RANGE EXPANSION IN RELATED LITERATURE.....	12
Method Books	12
Wind Band Method Books.....	20
III. DEFINING PROGRESSION FOR UPWARD RANGE EXPANSION	26
A Staircase Model to Upper Range Expansion.....	26
Defining and Labeling the Progressive and Sequential Model	28
IV. PROGRESSIVE EXERCISES FOR HIGH RANGE EXPANSION	48
Free Buzzing and Mouthpiece Buzzing Exercises - 1	49
Buzzing Around – 1A	49
Up and Down – 1B	50
Climbing Higher – 1C.....	50
Oscillation of Two Harmonic Series Partial in Stepwise Motion - 2	51
Back and Forth – 2A	51
Small Steps – 2B.....	55
Smoother Strides – 2C.....	55
Firmly Stepping – 2D.....	56

Moving Parts – 2E	56
Quick Changes – 2F	56
Exercises Oscillating Between Three OTS Partial in	
Stepwise Motion - 3	57
Three Up – 3A	57
Fluid Motion – 3B.....	57
Jig in Two – 3C.....	57
Repeat After Me – 3D.....	58
Bouncing Up – 3E.....	58
Offbeat-Kilter – 3F	58
Paradigms with Multiple OTS Partial in	
Stepwise Motion - 4	59
The Lower Seven – 4A	59
Rising Up – 4B.....	59
Eight by Sixteen – 4C	60
Copycat – 4D	60
Ostinato Time -4E	60
Ragtime-esque – 4F	61
Exercises of Adjacent OTS Partial - 5	61
Fours, Fives, and Sixes – 5A	61
Stretching Higher – 5B	62
Side-by-Side – 5C	62
Discordant Tones – 5D	62
A Waltzing Bass Line – 5E.....	63
Next-Door Fanfare – 5F.....	63
Exercises of Adjacent and Non-adjacent OTS Partial - 6.....	64
Glissing and Slurring – 6A	64
Skipping on Over – 6B	64
Hunting Overtones – 6C	64
Leaps and Bounds – 6D	65
Jumping in Thirds – 6E.....	65
Wide Range Waltz – 6F.....	66
Lyrical Leaping – 6G	66
Long Distance Echoes – 6H.....	67
Spanning Great Lengths – 6I	67
Paradigms with Adjacent and Non-adjacent OTS	
Partial with Changing Harmonic Series - 7	68
Expanding Higher – 7A	68
Classical Melody – 7B	69
A Bluesy Tune – 7C.....	70
Soaring Theme – 7D	71
Caribbean Shanty – 7E.....	72
Hoe-Down – 7F.....	73

Flying Skyward – 7G	74
V. PROGRESSIVE EXERCISE COMMENTARY	75
Free Buzzing and Mouthpiece Buzzing Exercises.....	75
Buzzing Around (1A)	75
Up and Down (1B).....	76
Climbing Higher (1C)	76
Oscillation of Two Harmonic Series Partial in	
Stepwise Motion.....	77
Back and Forth (2A)	78
Small Steps (2B)	78
Smoother Strides (2C).....	78
Firmly Stepping (2D).....	79
Moving Parts (2E).....	79
Quick Changes (2F)	79
Oscillation of Three Harmonic Series Partial in	
Stepwise Motion.....	80
Three Up (3A).....	81
Fluid Motion (3B)	81
Jig in Two (3C)	81
Repeat After Me (3D)	81
Bouncing Up (3E).....	82
Offbeat-Kilter (3F).....	82
Paradigms of Multiple Harmonic Series Partial in	
Stepwise Motion.....	83
The Lower Seven (4A).....	83
Rising Up (4B).....	84
Eight by Sixteen (4C).....	84
Copycat (4D).....	85
Ostinato Time (4E)	85
Ragtime-esque (4F).....	85
Exercises of Adjacent Harmonic Series Partial	86
Fours, Fives, and Sixes (5A).....	86
Stretching Higher (5B).....	86
Side-by-Side (5C)	87
Discordant Tones (5D).....	87
A Waltzing Bass Line (5E)	87
Next-Door Fanfare (5F)	88
Exercises of Non-adjacent Harmonic Series Partial	88
Glissing and Slurring (6A).....	89
Skipping on Over (6B).....	90
Hunting Overtones (6C).....	90

Leaps and Bounds (6D)	90
Jumping in Thirds (6E)	90
Wide Range Waltz (6F)	91
Lyrical Leaping (6G)	91
Long Distance Echoes (6H)	91
Spanning Great Lengths (6I)	92
Paradigms of Adjacent and Non-adjacent Harmonic Series	
Partial with Changing Harmonic Series	92
Expanding Higher (7A)	93
Classical Melody (7B)	93
A Bluesy Tune (7C)	94
Soaring Theme (7D)	94
Caribbean Shanty (7E)	94
Hoe-Down (7F)	95
Flying Skyward (7G)	95
BIBLIOGRAPHY	97
APPENDIX A. HORN METHOD BOOKS	101
APPENDIX B. WIND BAND METHOD BOOKS	104

LIST OF FIGURES

	Page
Figure 1.1. Octave Designation System.....	11
Figure 1.2. Harmonic Series	11
Figure 2.1. Howe’s <i>Method for French Horn</i> - Exercise #3.....	15
Figure 2.2. Pottag-Hovey’s <i>Method for French Horn</i> - Exercise #3	15
Figure 2.3. Kinyon’s <i>Breeze-easy Method</i> - Exercise #3.....	15
Figure 2.4. Yancich’s <i>Method for French Horn</i> - Exercise 2a	16
Figure 2.5. Teuber’s <i>Progressive Etudes in Flexibility and Range</i> <i>Development for French Horn</i> - Exercise #1.....	16
Figure 2.6. Clevenger’s <i>French Horn Method Book 1</i> - Exercise #6	16
Figure 2.7. Pottag-Hovey’s <i>Method for French Horn</i> - Exercise #13	18
Figure 2.8. Kinyon’s <i>Breeze-easy Method</i> - Lesson 5, #1	18
Figure 2.9. Howe’s <i>Method for French Horn</i> - Exercise #35.....	18
Figure 2.10. Teuber’s <i>Progressive Etudes in Flexibility and Range</i> <i>Development for French Horn</i> - Exercise #4.....	18
Figure 2.11. Clevenger’s <i>French Horn Method Book 1</i> - Exercise #88	19
Figure 2.12. <i>The Yamaha Advantage</i> - Exercise H15	21
Figure 2.13. <i>The Yamaha Advantage</i> - Exercise A9	21
Figure 2.14. <i>Essential Elements</i> - Exercise 10 “Horns only”.	22
Figure 2.15. <i>Essential Elements</i> - Exercise 27 “Horns only”.	22
Figure 2.16. <i>Essential Elements</i> - Exercise 27 “Full band”.	23
Figure 2.17. <i>Sound Innovations</i> - Exercise 2	23

Figure 2.18. <i>Sound Innovations</i> - Exercise 4	24
Figure 3.1. <i>Buzzing Paradigm Example</i> – Gradually Ascending Upward Patterns.....	30
Figure 3.2. <i>Yancich</i> - Buzzing on the Mouthpiece Exercise ⁴⁸	31
Figure 3.3. <i>Glissando Buzzing Exercise with Mouthpiece</i>	31
Figure 3.4. F horn: (0), OTS 6 (G4) Exercise	34
Figure 3.5. E horn: (2), OTS 6 (F [#] 4) Exercise	34
Figure 3.6. E ^b horn: (1), OTS 6 (F4) Exercise	34
Figure 3.7. D horn: (1, 2), OTS 6 (E4) Exercise.....	34
Figure 3.8. <i>Teuber</i> - Exercise 7a ⁵⁵	35
Figure 3.9. <i>Modified Teuber Exercise 7a</i> – Applying C Harmonic Series	37
Figure 3.10. <i>Modified Teuber Exercise 7a</i> – Applying D ^b Harmonic Series	37
Figure 3.11. <i>Modified Teuber Exercise 7a</i> – Applying D Harmonic Series.....	38
Figure 3.12. <i>Modified Teuber Exercise 7a</i> – Applying C Harmonic Series/Ascending in a Three Note Sequence	39
Figure 3.13. <i>Brophy</i> - High Register Exercise No. 6 ⁶²	39
Figure 3.14. <i>Adjacent Harmonic Series Exercise</i> – Large Intervallic Distance Practice.....	41
Figure 3.15. <i>Non-adjacent Harmonic Series Exercise</i> – Large Intervallic Distance Practice.....	41
Figure 3.16. <i>Non-adjacent Harmonic Series Exercise</i> – Large Intervallic Distances (third, fourths, and fifths) Practice	42
Figure 3.17. “M” Shaped Pattern of Adjacent and Non-adjacent OTS Partial	43

Figure 3.18. <i>“M” Shaped Pattern of Adjacent and Non-adjacent OTS Partial</i> <i>with Larger Intervals</i>	43
Figure 3.19. Staircase Model of the Progressive Method	44

CHAPTER I

INTRODUCTION

Methods for Beginning Horn Players

Teachers use an array of method and etude books in fundamental development for their beginning horn players. These books include technical skills presented with musical examples for students to practice. Some commonly used examples are Philip Farkas' *The Art of Horn Playing*¹, Georg Kopprasch's *Sixty Selected Studies*², the six Maxime-Alphonse etudes³, and Georges Barboteu's etude books⁴ that work on specific concepts for improvement. These books are best used by an intermediate to advanced hornist simply because of the broad spectrum of fundamentals the player must master before focusing on an etude's purpose. Certain method books are written specifically for

¹ Philip Farkas, *Art of French Horn Playing* (Evanston: Alfred Music, 1956).

² Georg Kopprasch, *Sixty Selected Studies for French Horn, Book I* (New York: Carl Fisher, 1939).

³ Jean Maxime-Alphonse, *200 Etudes nouvelles melodiques et progressives pour cor* (Paris: Alphonse-Leduc, 1920).

⁴ Georges Barboteu, *Lectures exercices pour cor* (Paris: Editions Choudens, 1963).

beginners, such as Marvin Howe's *Method for French Horn*⁵, John Kinyon's *Breeze-Easy Method* books⁶, or the Pottag-Hovey Methods⁷. These have been successful partly because of their progressive sequencing of technique introduction. "Methods" can be defined as "materials that employ a regular and systematic procedure for developing technical and, ideally, musical proficiency to a predetermined level,"⁸ and "progressive" is defined as "happening or developing gradually; proceeding step by step."⁹ In these methods geared towards beginners, a progressive sequence entails introducing new notes, rhythms or key signatures followed by application exercises. An effective progressive method for the beginning hornist introduces new concepts sequentially and allows young players to improve technically and with success.

One key problem with these beginning progressive methods is the rushed expansion of range upward. Young hornists often struggle specifically with ascending into the higher range of the instrument more than other technical areas of the horn. The technique of high range expansion in method books is expounded generally by the introduction of the new note and fingering with specific etudes to practice. However,

⁵ Marvin Howe, *Method for French Horn* (New York: Remick Music Corporation, 1950).

⁶ John Kinyon, *Breeze-Easy Method 1 for French Horn* (New York: M. Witmark and Sons, 1959).

⁷ Max P. Pottag and Nilo W. Hovey, *Pottag-Hovey Method for French Horn* (New York: Belwin, Inc., 1939).

⁸ Johnny Pherigo, "A Critical Survey of Materials and Practices Related to Teaching the Horn, 1965-1985" (DMA diss., University of Illinois at Urbana-Champaign, 1986), 2.

⁹ "Progressive" In *Oxford Dictionaries*,
http://www.oxforddictionaries.com/us/definition/american_english/progressive (accessed September 14, 2015).

instruction of the mechanics of playing higher on the horn is rarely given to the player. This may cause a beginning hornist to sacrifice quality sound production when attempting higher pitches. With young students who struggle with ascending in range, exercises based on the fundamentals of buzzing and the overtone series can aid in high range pitch production.

Buzzing is defined as the vibrations of the lips inside the mouthpiece to produce sound from a brass instrument.¹⁰ The overtone series of the horn is collective divisions of the air column of a wind instrument that produce a series of pitches on the instrument when played.¹¹ William R. Brophy explained the importance of buzzing in his horn method published in 1977, stating that it forces the embouchure to form correctly, strengthens the embouchure, gets over psychological barriers of difficult technical playing and keeps the lips in shape if there is no opportunity to practice.¹² Buzzing and overtone series exercises are paramount for beginning horn students to develop good tone, endurance and flexibility, and can also be used for high range expansion. As well, exercises for achieving flexibility in buzzing techniques are absent, not capitalizing on their importance for the beginning hornist. Beginning method books rarely mention the

¹⁰ "Should Brass Players Use the Practice of Mouthpiece Buzzing?" Mouthpiece Buzzing for Brass Instrument Players. Accessed February 20, 2016. <http://www.wwbw.com/Practice-and-Performance-g25669t0.wwbw>.

¹¹ Baines, Anthony and John Borwick . "harmonic series." *The Oxford Companion to Music*. Ed. Alison Latham. *Oxford Music Online*. Oxford University Press. Web. 9 Jan. 2016. <<http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e3137>>.

¹² William R. Brophy, *Technical Studies from solving special problems on the Horn*, (New York: Carl Fischer, 1977), 38.

overtone series and often state only how to vibrate the lips and position the mouthpiece for buzzing, but rarely mention the importance of the buzz. The significance of the mouthpiece buzz is that it can aid in skills that beginners are improving, including high range extension.¹³ Buzzing with or without the mouthpiece corresponds to navigating the overtone series on the horn. To practice and achieve success in one will naturally lead to accomplishment in the other, reinforcing the necessary presence of both in a method geared toward high range extension for a beginning hornist.¹⁴

Purpose

The purpose of this project is to develop a progressive series of etudes based on partials of the harmonic series for beginning horn players to expand range upward. The etudes will specifically relate to an established model of sequential techniques to be practiced as high range expansion is acquired. Each technical aspect of these etudes is based and built upon fundamental practical skills the horn player uses in performance on harmonic series partials. Each etude has a complimentary duet part for either a teacher or peer to perform to provide engagement and enjoyment for the student while practicing.

¹³ Pherigo, “A Critical Survey,” 40.

¹⁴ It should be noted here that these concepts of free buzzing and mouthpiece buzzing relate directly to horn playing, and should not be transferred to being paramount for the other brass instruments.

Related Literature

There are several published surveys related to teaching horn, but few documents have centered on the specificity of categorizing methods solely for beginning hornists. In 1966, Marvin Howe's dissertation "A Critical Survey of Literature, Materials, Opinions and Practices Related to Teaching the French Horn" indexed a list of method and etude books.¹⁵ Each method is annotated with its place and year of publication, a brief description of book layout and a grade of difficulty on a scale of 1-9. As well, Howe gives pedagogical information on mechanical, physical and mental aspects of horn playing.

A dissertation by Johnny Pherigo published in 1986 entitled "A Critical Survey of Materials and Practices Related to Teaching the Horn, 1965-1985," continued the scholarship of Howe by adding more published methods.¹⁶ Pherigo includes instruction on both physical aspects and technical proficiency for playing the horn in the document as well as indexes methods and etude books with more detailed annotations than Howe about range, strengths and weaknesses of each method.

Two more studies have collected pedagogical materials for teaching the horn since 1986. First is Joseph Johnson's "Etude Books for Horn Published from 1985 to 2011: An Annotated Guide"¹⁷ and "Bibliografía seleccionada e anotada de estudios para

¹⁵ Marvin Howe, "A Critical Survey of Literature, Materials, Opinions, and Practices Related to Teaching the French Horn" (PhD diss., University of Iowa, 1966).

¹⁶ Pherigo, "A Critical Survey."

¹⁷ Joseph Johnson, "Etude Books for Horn Published from 1985 to 2011: An Annotated Guide" (DMA diss., University of West Virginia, 2012).

rompa publicados entre 1950 e 2011” by Ricardo Matosinhos¹⁸. Both studies include more detailed annotations than Howe’s and Pherigo’s with less attention given to pedagogical concepts.

For the purpose of clarity, etude books from these compilations of literature for horn study will be considered relevant if the author graded them with a numerical grade of “1” or classification of “Acessível.”¹⁹ Appendix A of this document lists the relevant literature catalogued by Howe, Pherigo, Johnson and Matosinhos. In these authors’ annotations, books are a mixture of fundamental study and exercises for practice, or simply etudes for playing. A majority of these methods mention buzzing and mouthpiece placement, however with the exception of Freiberg’s *Naturhorn-Schule*²⁰ none mention studies done in the harmonic series of the horn.²¹

In the time of Howe’s dissertation publication there were a few unpublished master’s theses written with literature for the beginning hornist as the primary subject.²² Wilbur Bullock Jr.’s master’s thesis²³ “limited his study to a review of seven elementary

¹⁸ Ricardo Matosinhos, “Bibliografia selecionada e anotada de estudos para trompa publicados entre 1950 e 2011” (MES diss., Universidade Católica Portuguesa, 2012).

¹⁹ Translation: “Accessible.”

²⁰ Translation: “Natural horn-school.”

²¹ Pherigo, “A Critical Survey,” 114.

²² Howe, “A Critical Survey,” 3.

²³ Wilbur W. Bullock, Jr., “A Survey, Critical Analysis and Evaluation of Elementary French Horn Methods Now in Publication” (unpublished Master’s thesis, Mississippi Southern College, 1949).

horn methods; four of the seven methods reviewed are obsolete or nearly so.”²⁴ A thesis by Charles Gustin²⁵ is a review of pedagogical concepts and fundamental knowledge for a horn player, but lists few literature resources for beginning students.²⁶ “[Andrew J.] May²⁷ questioned only eight teachers, apparently from the public schools, among whom there appeared to be much confusion. He doesn’t refer to horn “methods” and omits any reference to breathing, player resonance, ear-training, or mouthpiece practice.”²⁸ In conclusion, these studies’ intents do not contribute to the collections of pedagogical literature for beginning hornists.

For the purposes of this study, it would be remiss to leave out the method books of wind band study used in school classrooms. These methods are written to be accessible and progressive for students who have never previously played an instrument, introducing performing skills as well as basic definitions of music reading, meter recognition, rhythm, dynamics, and more. These beginning band method books are used primarily in large classroom settings with emphases on unison playing amongst students, progressive growth despite pedagogical differences in instrument types and performances

²⁴ Howe, “A Critical Survey,” 4.

²⁵ Charles E. Gustin, “The French Horn: Its Effective Use in American Schools” (unpublished Master’s thesis, The University of Southern California, 1954.)

²⁶ Charles E. Gustin, “The French Horn: Its Effective Use in American Schools” (unpublished Master’s thesis, The University of Southern California, 1954.)

²⁷ Andrew J. May, “Teaching the French Horn” (unpublished Master’s thesis, Ohio State University, 1953).

²⁸ Howe, “A Critical Survey,” 5.

of simple melodies. Additionally, audio CD's are often included allowing the student to practice at home with aural accompanying reference. It is important to research these methods, as these may be the first notes on a page that a beginning hornist may see and play. Kie Watkins'²⁹ dissertation established a list of the most commonly used band method books, listed in Appendix B of this document.³⁰ Analysis of band method books will focus on pace of new notes introduced, inspection of fundamental concepts described, and progression of exercise complexity through the first horn book in each method.

The lack of current research in the collection of these elementary methods for beginning horn players emphasizes the justification for continued and additional scholarship in this area.

Procedure

The progressive series of exercises will be duets and will focus on fundamental skills for ascending in range: buzzing exercises, done both with and without the mouthpiece, harmonic series partial oscillations and paradigms, intervallic practice on adjacent and non-adjacent harmonic series pitches, and combinations of using different harmonic series' within one exercise. The exercises will be carefully constructed with specific goals in mind according to a staircase model developed to build fundamental

²⁹ Kie Watkins, "An Analysis of Select Beginning Band Method Books and the Level to which They Address the National Standards for Music Education" (DMA diss., The Ohio State University, 2011).

³⁰ Watkins, "An Analysis" 37-38.

playing technique. Each step of the model establishes a sequential order of skills needed in acquiring proficiency in expanding range upward. The steps are as follows: 1) buzzing exercises with and without the mouthpiece, 2) oscillation between two harmonic series partials, 3) oscillation between three harmonic series partials, 4) ascending paradigms with multiple harmonic series partials, 5) exercises with adjacent harmonic series partials, 6) exercises with non-adjacent harmonic series partials, and 7) paradigms on harmonic series partials with adjacent and non-adjacent pitches.

Buzzing exercises act as preliminary activities to the sound production needed for the harmonic series partials exercises. These preliminary activities of practicing are crucial to the beginning hornist. In the *Art of Brass Playing*, Phil Farkas states “[In fact] if you can’t play it on the mouthpiece, you can’t play it on the instrument.”³¹ Exercises will utilize graphic notation, with no specific pitch for players to hit, and will outline patterns to buzz. These exercises will vary by different ascending and descending patterns, contrasting rhythms, and extremes of buzzing range. These will all double as free buzzing and mouthpiece buzzing exercises.

The overtone series exercises will all focus on ascending and descending within partials, emphasizing control of pitch with only lips by playing on one valve combination. All overtone series exercises feature an aspect of transposition, as they are written in either the C or F horn harmonic series with accompanying overtone fingering, and expected to be transposed upward with correct valve combinations. Like buzzing

³¹ Phillip Farkas, *The Art of Brass Playing* (Rochester: Wind Music Inc., 1989), 46.

exercises, these will vary by different ascending and descending patterns and contrasting rhythms.

Each etude is written as a duet, where both horns work on the same skill set intended by the exercise. Either horn part can be played by a teacher or colleague to develop a sense of engagement in practice with another person that a horn method or wind band method does not always offer.

Limitations

Horn methods and wind band method books studied include the most commercially available instead of all possible literature. This method does not seek to replace or disqualify any previous scholarship in the realm of beginning horn players on the instrument. The intent is for this progression of exercises to be used as supplemental material for the beginner and their private tutor, or ensemble director at school to make ascending into the high range of the instrument more accessible. Although many etude and method books written address matters of range expansion into the high range in all levels of difficulty, this book serves to introduce the very beginning hornist into this specific area of range expansion by focusing on using buzzing and natural harmonics of the instrument to alleviate a blockade of technical struggle.

Definitions

The octave designation system used in this document (Figure 1.1) is the one preferred by the Acoustical Society of America.

Figure 1.1. Octave Designation System



The following fundamental and intervallic pattern (Figure 1.2) defines the harmonic series. For the purposes of this study, only notes in the harmonic series from pitch 3-13 will be used in this method.

Figure 1.2. Harmonic Series



CHAPTER II

EXAMINING FIRST NOTES AND UPWARD RANGE EXPANSION IN RELATED LITERATURE

For beginning horn players, method books are often organized in a progressive manner with musical etudes to practice skills. An “etude” is defined as a “fairly short piece[s] whose principal aim is the development or exploitation of a particular aspect of performing technique.”³² Having defined “progressive” earlier, it is important to note how a collective sample of beginning methods organize written studies and etudes defined as progressive in the way of books written specifically for the horn and wind band methods.³³

Method Books

The Foreword of these books often realize the true intention of the method’s organization. The authors are descriptive in their usage of the literature as a method only for beginners, a supplemental method to accompany other text and for what age groups the exercises are useful. Howe’s book introduces technique such as new rhythms, notes, dynamics, etc. in a sequential manner and relates progression to inclusion of these techniques into musical etudes. For Howe, progressivism means: “New problems are isolated for the sake of clarity, and the problems are explained. However, once isolated

³² "Etude." *Grove Music Online. Oxford Music Online*. Oxford University Press. Web. 30 Nov. 2015. <<http://www.oxfordmusiconline.com/subscriber/article/grove/music/09062>>.

³³ From this point forward, the words “etude(s)” and “exercise(s)” will be used interchangeably.

the problems are incorporated into the material of the method as it progresses.”³⁴ The

Pottag-Hovey method introduces technique as progressivism in this manner:

Primary attention was given to the selection of melodies and the writing of exercises which, when properly presented, will develop in the beginning student the most desirable musical habits, particularly in the matters of melodic taste and instinctive feeling for correct phrasing. Then to arrange this material in logical order from the standpoint of rhythmic progression, extension of range, and development of technique, was the next problem to be solved.³⁵

The Foreword of Kinyon’s *Breeze-Easy Method’s* reveals its progressive purpose is

based on getting beginning students to contribute in a large ensemble:

This method is designed to give the young student a proper conception and systematic approach to music reading and the art of brass performance. Emphasis is on the fundamentals including tone production, tone placement, embouchure development, technique, rhythmic perception and tonal consciousness. Through this thorough and efficient course of study the student will be led to take his place as a contributing member of the school band or orchestra in the shortest possible time.³⁶

In contrast to these, Fred Teuber’s *Progressive Etudes in Flexibility and Range Development for French Horn*³⁷ is marketed specifically as a supplemental book to other literature intended for use with a private teacher. The purpose is to logically order and

³⁴ Howe, “A Critical Survey,” Foreword.

³⁵ Pottag and Hovey, *Pottag-Hovey Method*, Foreword.

³⁶ Kinyon, *Breeze-Easy Method 1*, Foreword.

³⁷ Teuber, Fred, *Progressive Studies in Flexibility and Range Development for French Horn* (Bellingham: Medici Music Press, 198-?).

develop technique essential to playing.³⁸ An outline of the book is provided per appropriate years of playing, enumerating specific numbers of each chapter that a first-year horn player should play.

These few methods present different goals of a progressive sequence of etudes for general technical improvement that relate directly to teaching a beginning horn player: A) isolation of new technical developments into a short etude followed by immediate inclusion into a written exercise B) development of musicality by introduction of new technique into written melodic etudes gradually increasing in difficulty, C) a basis on fundamentals when introducing new technique to quickly prepare the beginning horn player for large ensemble contribution, and D) an overall supplemental study applicable to all ages with appropriately sequential etudes per chapter relating to skill level.

Many factors define a method's success in progressivity. To determine how quickly the method advances for beginners, several factors must be investigated. For example, how is range expansion handled? How often and in what manner are more complex rhythms introduced? When do different articulations begin appearing in the music, and how are they prepared for? How long are the etudes in length? For the purposes of this study, the most important aspect of the progressiveness of each method lies with upward range expansion.

The first note of the method book for a beginning horn player determines upward expansion difficulty. Books such as those enumerated above begin on G4 and expand

³⁸ Ibid. Foreword.

downward first. The Howe and Pottag-Hovey methods introduce G4 followed by F4 incorporating valve usage initially in both third exercises (Figures 2.1 and 2.2).

Figure 2.1. Howe's *Method for French Horn* – Exercise #3



Figure 2.2. Pottag-Hovey's *Method for French Horn* – Exercise #3



Kinyon's method begins on G4 and expands downward to E4 on exercise two, working with pitches on the harmonic series. In exercise three, the beginning horn player begins oscillation between G4 and E4 with rests between notes (Figure 2.3).

Figure 2.3. Kinyon's *Breeze-easy Method* – Exercise #3



In Yancich's *Method for French Horn*³⁹ the introduction of a new note is almost identical to the exercises in the Kinyon, except with added dynamics and articulation (Figure 2.4).

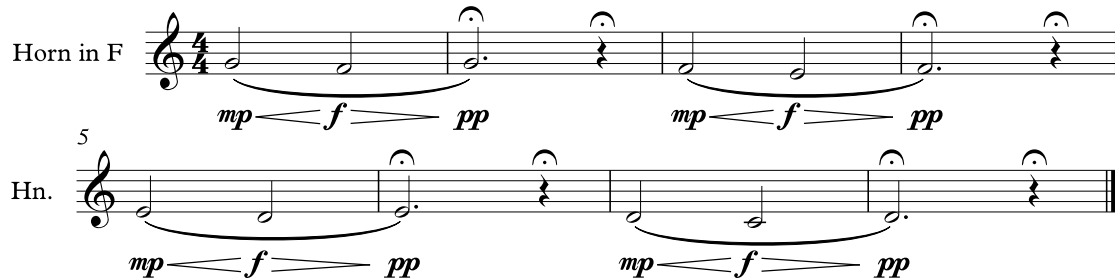
³⁹ Milan Yancich, *Method for French Horn* (Bloomington: Wind Music Inc., 1966) 3.

Figure 2.4. Yancich's *Method for French Horn* – Exercise 2a



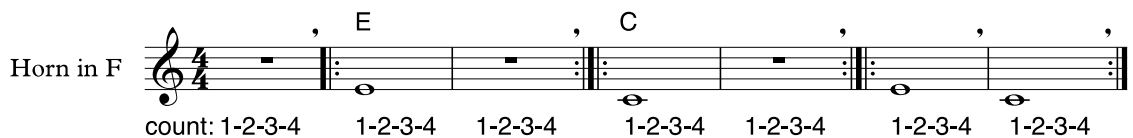
Teuber begins changing pitch on the first exercise by gradually descending and ascending in pitch, beginning on G4 (Figure 2.5).

Figure 2.5. Teuber's *Progressive Etudes in Flexibility and Range Development for French Horn* – Exercise #1



Dale Clevenger's *French Horn Method Book 1*⁴⁰ begins on E4 and moves to C4 within the first written exercise of the book, although named Exercise #6 (Figure 2.6).

Figure 2.6. Clevenger's *French Horn Method Book 1* – Exercise #6



⁴⁰ Dale Clevenger, Mark McDunn, and Harold Rusch, *The Dale Clevenger French Horn Methods* (San Diego: Neil A. Kjos Music Col, 1974), 8.

Arguments have been made for using the harmonic series with beginning horn players, as demonstrated in the Kinyon and Clevenger methods, for technical improvement.

Closer inspection of these methods reveals that when the range of the horn is expanded upward in these methods, the next note introduced is either A^{b4} or A4 (shown in Figures 2.7, 2.8, 2.9, 2.10, and 2.11). When these new notes are introduced, the fingering is included for the F and B^b horn, but with very little advice on how to ascend higher in range on the instrument. Technically, the methods suggest that using a new fingering should give the correct pitch. The Howe is the only method to suggest advice for ascending into the high range. After both A4 and B^{b4} are introduced, Howe writes before an etude on slurring: “Aim your breath higher in the mouthpiece for a higher note” and includes vowel sounds of “tee” to raise the tongue in the back of the mouth for accuracy (although this is contradictory to his original statements).⁴¹ Several pages later, he lists more technical advice for ascending into higher range: “As you play higher: 1) The center of the lower lip lifts [slightly], 2) The tongue rises in the mouth [Tah-ee], 3) The breath strikes at a higher angle in the mouthpiece, 4) Keep breath flow steady, and 5) Do NOT use extra pressure [relax your left hand].”⁴² Range expansion occurs generally in the first part of each method, however some variances occur. Clevenger’s book introduces only the first notes of the C major triad for the first twenty-six pages of the method, expounding on musical practice within those specific tones.

⁴¹ Howe, *Method for French Horn*, 9.

⁴² Howe, *Method for French Horn*, 14.

Figure 2.7. Pottag-Hovey's *Method for French Horn* – Exercise #13

Figure 2.8. Kinyon's *Breeze-easy Method* – Lesson 5, #1

Figure 2.9. Howe's *Method for French Horn* – Exercise #35

Figure 2.10. Teuber's *Progressive Etudes in Flexibility and Range Development for French Horn* – Exercise #4

Figure 2.11. Clevenger's *French Horn Method Book 1* – Exercise #88

F horn - $\frac{1}{2}$ or 3
A Bb horn - $\frac{1}{2}$ or 3

Horn in F

count: 1-2-3-4 1-2-3-4 1-2-3-4 1-2-3-4 1-2-3-4 1-2-3-4 1-2-3-4 1-2-3-4

The introduction of new notes in these progressive methods varies, as referred to in Figures 2.7, 2.8, 2.9, 2.10, and 2.11. The Pottag-Hovey method approaches the upper pitch in step-wise motion, with all tongued pitches. Fingerings for both F and B^b side are given. Kinyon's book is almost identical to the Pottag-Hovey method in articulation and pitches, except for the inclusion of a leap of a third from F₄ to A₄ in the fifth measure. The Howe method approaches higher pitches in step-wise motion as well; the player slurs from the lower note to the upper note and back down. However, it is worth mentioning that the player is slurring between these pitches as opposed to articulating each note. It is possible that this is an editing error, and a slur was intended for the ascent in measures three and four, from the G₄ to the A^b₄, because of the slurring consistency in the rest of the exercise. The Teuber also slurs between pitches, however starting that portion of the exercise on upper A^b₄ and slurs in descent rather than approaching from beneath as the other method books demonstrate. Clevenger's book introduces A₄ in the same exercise format as Figure 2.6. The approach of each method is different to an upper partial, with variations of articulation, chromatic ascent, and starting pitch of the exercise.

Another noted feature of the etudes in a method book for beginning horn players is the length of each exercise. The first etudes of each book mentioned are quite short in

length, normally eight bars (with the exception of the Teuber, with a first exercise of 16 bars length). Shorter etudes are important for a beginner to practice the fundamentals of an exercise's purpose without exhausting the endurance that is required for lengthy playing on the horn. As these method books progress in difficulty through increased technique introduction and acquisition, the exercises increase in length to improve endurance.

Wind Band Method Books

Method books used in wind band classes in schools have different sequences based on the book's organization. Often times, the structures of these band methods include pages designed solely for the use of beginning horn players. For example, *The Yamaha Advantage* book⁴³ includes several pages with the intent of helping out beginning players: exercises solely for horn players, exercises just for brass players, and pages similar to full band etudes in different keys. Stated in the beginning of the book:

The Yamaha Advantage horn book has eight pages more than other instruments. Pages 4A and 5A provide an additional option to begin study. On pages 6-10, left side pages sound in unison with the rest of the band. Right side, "Extra," pages provide optional notes to play in a more comfortable range. These exercises are numbered E1, E2, etc. and can be used for extra practice or played in 4ths/5ths with the band.⁴⁴

Page 4A in *The Yamaha Advantage* begins with exercises on G4 descending to E4 (Figure 2.12), and adds exercises on A4 on Page 5A (Figure 2.13). Emphasis within

⁴³ Sandy Feldstein and Larry Clark, *The Yamaha Advantage: Musicianship from Day One* (New York: Carl Fisher, 2001).

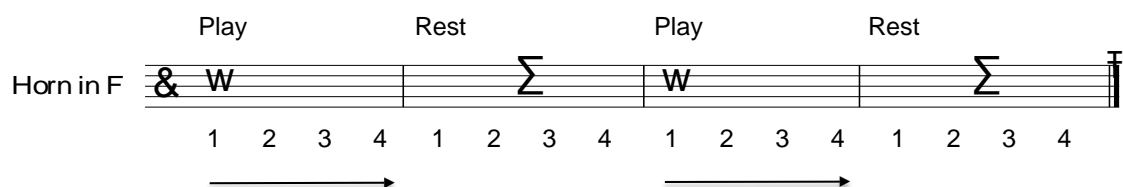
⁴⁴ Ibid, 1.

these pages is on reading pitches and differentiation between the rhythmic values of whole notes, half notes, quarter notes, and their corresponding rests.

Figure 2.12. *The Yamaha Advantage* – Exercise H15



Figure 2.13. *The Yamaha Advantage* – Exercise A9



The next five pages of the book give the horn players the option of playing in unison with the ensemble (which is centered on learning pitches in the key of B^b major) by learning notes below the staff or playing a perfect fifth above to play in a more advantageous range. Octave displacements are used beginning on the eighth page to keep the horn player playing under a C3. After page eleven, the horn player must play in unison with the band, with occasional octave displacement used throughout the rest of this book to stay below a D3.

The Essential Elements 2000 method⁴⁵ has optional pages from the beginning of the book for horn players to choose a range to play in. These optional pages are labeled

⁴⁵ Tim Lautzenheiser, John Higgins, Charles Menghini, Paul Lavender, Tom C. Rhodes, and Don Bierschenk, *Essential Elements 2000* (Milwaukee: Hal Leonard Corporation, 2004).

“Horns only” and alternate with pages entitled “Full band” on page 4 through page 11 of the method book. The relation between range choices puts the “Horns only” pages in a more appropriately suited range for the beginning horn player, beginning a perfect fourth lower than the “Full band” pages. Pages 4A-5A for “Horns only” begins on G4 and descends to C4 in whole note and quarter note patterns. The first exercise where different pitches occur includes the first five learned notes (Figure 2.14). A4 is added in an exercise on page 8A in the context of an exercise expanding upward from F4 (Figure 2.15).

Figure 2.14. *Essential Elements* – Exercise 10 “Horns only”

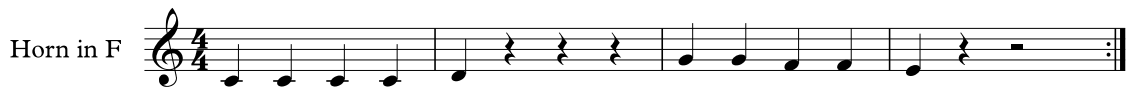


Figure 2.15. *Essential Elements* – Exercise 27 “Horns only”



One advantage *The Essential Elements* method includes in the “Full band” optional pages are for students to choose an octave in which to play. Although being centered in B^b major, the exercises let the student choose the octave to play in when performing with the full band, shown in Figure 2.16. This “Full band” equivalent to exercise 27 (Figure 2.15) begins with octave B^b4.

Figure 2.16. *Essential Elements* – Exercise 27 “Full band”



The “Horns only” optional exercises conclude when the range introduced doubles the range introduced in the beginning “Full band” exercises.

*Sound Innovations for Concert Band*⁴⁶ is a band method divided into five sections of sound development. The six sections are entitled Sound Beginnings, Sound Fundamentals, Sound Musicianship, Sound Development, Sound Techniques and Sound Performance. The first three chapters are differentiated by range expansion upward in each section (D5 introduced in Sound Fundamentals and E^b5 in Sound Musicianship), while the final three sections present different chromatic pitches, articulations, scales and arpeggios.

Sound Innovations differs from the analyzed methods above by introducing the first pitch as A4, and featuring exercises in the first five pages with range F4-C5. This book chooses not to give the horn player an option to displace the octaves of notes that may be initially out of reach. Beginning on A4 (Figure 2.16), the book oscillates between pitches immediately after the introduction of G4 on Exercise 4 (Figure 2.17).

Figure 2.17. *Sound Innovations* – Exercise 2



⁴⁶ Robert Sheldon, Peter Boonshaft, Dave Black and Bob Phillips, *Sound Innovations for Concert Band* (Van Nuys: Alfred Music Publishing, 2010).

Figure 2.18. *Sound Innovations* – Exercise 4



Sound Innovations includes optional pages for the beginning horn player to choose from, but this section is located at the back of the book with exercise numbers ascending far beyond those of other instruments' books. For example, other method books (flute, clarinet, trumpet, etc.) end on numbered exercise 187, and the horn method extends to 250 etudes. The additional exercises begin under the same organization and sequence as the *Sound Beginnings* at the beginning of the method, but differ by introducing the exercises with a tonality in F major, with E4 as the first note presented. Exercises 237-250 are designed as specific etudes for the horn player to gain range and practice skills in the range in which the method book began.

Another element of these wind band methods is the musical content of the etudes. Analyses done show many older methods established reliance upon etudes' musical material drawn from folk songs, nursery rhyme tunes, and other familiar melodies.⁴⁷ Current wind band methods studied introduce melodies such as Hot Cross Buns, Jingle Bells, Lightly Row, and Merrily We Roll Along in the first few pages for students to play. The familiarity of these melodies allows the student to perform popular songs they grow up hearing and assist in training the ear to be accurate on their musical instrument.

⁴⁷ Texter, Merry Elizabeth. "A historical and analytical investigation of the beginning band method book." (Ph. D. diss., The Ohio State University, 1975).

By assessing how a melody is supposed to sound by familiarity, a student can establish how to rectify incorrect pitches, improving accuracy.

CHAPTER III

DEFINING PROGRESSION FOR UPWARD RANGE EXPANSION

A Staircase Model to Upper Range Expansion

A progressively organized method is important in proper and efficient development. While many methods have a degree of organization, as described in the previous chapter, those systems don't always address specific issues in ways that maximize efficiency. For high range expansion, it is crucially important for a method to structure exercises in a manner that reflects a sequentially ordered progression of etudes.

Establishing a progressive study for the high range entails surveying the most fundamental techniques of playing the horn and re-organizing to move in a step-by-step sequential manner. Progressivity can be paralleled to climbing a staircase: beginning at the ground floor and gradually ascending to a higher plane by climbing one stair step at a time. Problems develop in climbing the staircase if the steps do not stay in an ascending manner or if they ascend at an uneven rate. A step represents fundamental knowledge that a player should have gained before ascending or moving on to a next higher, or more difficult, step on the staircase.

In relation, obstacles can hinder the development of the high range if proper steps are not taken to approach the upper register of the horn without rooted knowledge and practice of fundamental techniques paralleling upper range expansion. For example, certain methods introduce dynamics or articulation simultaneously in presentation of

higher pitches for a student to learn and practice. Not only does this increase the difficulty of the literature to be practiced, with multiple new concepts to adhere to, but also takes for granted the acquisition of a higher note. Granted, these methods' organization introduces higher pitches that are directly above pitches already practiced in previous etudes. However, not considered is the concurrent mastery of a new fingering of the pitch, placement of the pitch in the harmonic series of the horn, and new and varying length of the instrument to blow through when layering multiple new concepts with range is not considered. Relating to the staircase analogy, this is equivalent to a step size that is much further and higher than the step from the ground floor to the first stair. To be organized in a sequential manner, each step size should be equal to the previous and next ascending stair step. Likewise, an increase in range should not be layered with the burden of acquiring several other concepts of the horn technique concurrently.

A progressively sequenced staircase model of high range expansion begins with "ground level" fundamentals of sound production in free buzzing and mouthpiece buzzing, and gradually ascends by introducing one particular concept at a time for the beginner to practice. A crucial determination in the new skill introduced is its relation to the previous concept. For example, if students practice ascending paradigms in intervals of minor seconds, a next sequential paradigm would not have the student ascending in intervals of perfect fourths. New concepts introduced will be rooted in and related to the previous skill that preceded them.

Defining and Labeling the Progressive and Sequential Model

To define the steps needed within the staircase model of high range expansion, it is necessary to inspect, use, and possibly modify exercises from related literature. Many techniques described in method books create a sequential movement of technique to technique, but move too quickly through multiple concepts simultaneously. Specific focus is needed in progressive study on a particular skill so that each builds upon one another, or range expansion may become overwhelmed by an overload of new concepts to practice at once. To define each step in a staircase model of expanding the high range, etudes, exercises and ideas from related literature will be drawn from to create a progressive organization of sequential etudes.

A fundamental paramount to the development of the high range is the control and practice of the free buzz and mouthpiece buzz with embouchure formation. A sequential progression of horn playing begins with sound production and relies on the buzzing of the lips together to make a tone. Howe's method gives a definition of embouchure being the position of facial muscles when playing and advises students: "Work carefully on the buzz, for several weeks if necessary. You may proceed to the mouthpiece and horn, but do not neglect the buzz," yet with no described exercises.⁴⁸ Many pedagogues have also written about the buzz both with and without the mouthpiece. Farkas' writings on the embouchure and buzz in his *Art of Brass Playing* establish the physicality of the embouchure in the small muscles of the face working together to accomplish tasks of

⁴⁸ Howe, *Method for French horn*, Foreword.

encompassing a three or four octave range, roughly 36-48 pitches, at extreme dynamics of *fortissimo* to *pianissimo* with varying articulations.⁴⁹ He goes on to state that it is the air-column cooperating with the physicality of the lips, teeth and jaw, as well as mental state to produce the embouchure.⁵⁰ As well, the air-column must travel straight through the physical set-up of the embouchure through the horn to create sound.⁵¹ Farkas' *Art of French Horn Playing* chapter on Embouchure specifies further the embouchure by giving prose dedicated solely to the vibration of the lips, exemplifying the amplification definition of the horn by the buzz. The lips while held in tension, which force of air-column cause to stretch and snap together to produce audible sound, produce this process of amplification.⁵² He also expounds on higher range acquisition with the buzz and embouchure, stating that more rapid vibration is needed, with more tension in correct muscles to make lips snap together sooner, making vibration faster and pitch higher.⁵³

This fundamental step of the model of high range expansion must focus on the process of free buzzing and mouthpiece buzzing in playing higher pitches. To acquire the embouchure formation necessary to ascend in range for beginning horn players, exercises must be used that also ascend in range. These etudes should gradually ascend and descend slowly so the player gets used to the physicality of the embouchure, air-

⁴⁹ Farkas, *Art of Brass Playing*, 5.

⁵⁰ *Ibid.*, 5.

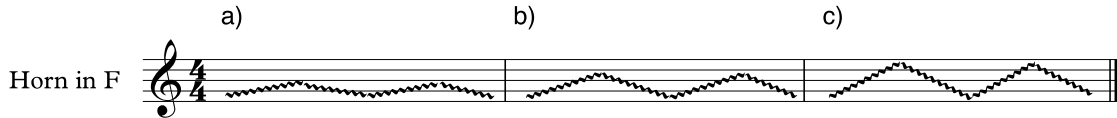
⁵¹ *Ibid.*, 7.

⁵² Farkas, *Art of French Horn Playing*, 19.

⁵³ *Ibid.*, 19.

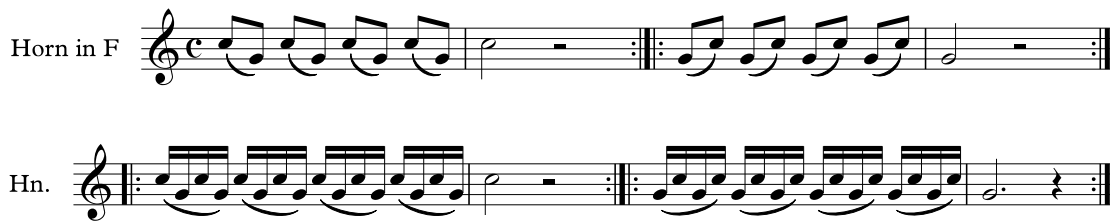
column and arch of the tongue coordinating to produce a higher frequency of buzz, both with and without the mouthpiece. Exercises should gradually increase in range upwards per rising and falling paradigm. These exercises will simply give the shape of the pattern of buzzing to be followed with and without the mouthpiece by ascending and descending on the treble clef staff with no specific pitches played. The following (Figure 3.1) is an example paradigm that gradually increases the range upward [at (b) the student increases range upward from (a), and (c) should be higher than both (a) and (b)] that the student should buzz with and without the mouthpiece to acquire the physical skills with the embouchure in coordination with the air-column to access the high range.

Figure 3.1. *Buzzing Paradigm Example – Gradually Ascending Upward Patterns*



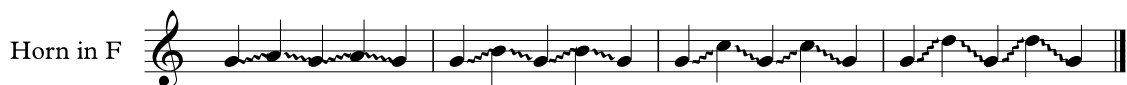
To take this exercise to a level that reinforces accuracy and pitch matching, this etude can be paired with a teacher playing pitches on the horn that matches the buzzing patterns suggested by the glissandi. For example, a teacher could assign notes to the beginning and ends of the glissandi and require the student to mouthpiece buzz along with their pitch. Yancich's *A Practical Guide to French Horn Playing* suggests that buzzing exercises be done on the mouthpiece in the form of scales, arpeggios, or single notes before initial warm-ups or pitches on the horn. One of the buzzing pattern examples included in his book is shown in Figure 3.2.

Figure 3.2. *Yancich – Buzzing on the Mouthpiece Exercise*⁵⁴



Although this type of exercise is useful for establishing accuracy with the mouthpiece, the glissando effect is neglected. The importance of the glissando is the continuation of the airstream and learning process of gradually coordinating the air column and embouchure to ascend in range. A glissando between two pitches explores the space between the two notes slowly and without interference of the horn slotting certain pitches of the harmonic series. A more useful exercise with pitch accuracy paired with a buzzing pattern (Figure 3.1) is to have pitches assigned to begin and return to in stepwise motion while the student buzzes along on the mouthpiece. An exercise like this would be helpful above the first note they begin with, such as G4. An example is shown in Figure 3.3.

Figure 3.3. *Glissando Buzzing Exercise with Mouthpiece*



After the practice of buzzing both with and without the mouthpiece, the next step is to place the mouthpiece into the receiver and practice on the horn in its entirety. The

⁵⁴ Yancich, *Practical Method*, 18.

use of free buzzing and mouthpiece buzzing had no fingerings or ability to slot notes, which easily transitions to practicing on the harmonic series of the horn. Exercises only featuring harmonic series notes of the horn are directly related to buzzing on the mouthpiece by the lack of valves used to change pitches. The knowledge of practicing in the harmonic series is of crucial pedagogical value to the beginning horn player, as they can relate pitches based on their place in the harmonic series rather than an arbitrary fingering. In his dissertation arguing that harmonic series should be taught in beginning stages of horn study, Patrick Richards suggests that learning the harmonic series is the best way to improve pitch accuracy and enhance overall playing.⁵⁵ By playing etudes made up entirely of notes in the harmonic series and without the added difficulty of changing fingerings or managing different lengths of the horn (shortened or lengthened), students are discouraged from relying on different fingerings to change pitch.⁵⁶

The harmonic series of the horn, referenced previously is collective divisions of the air column of a wind instrument that produce a series of pitches on the instrument when played. As found in Figure 1.2, the intervals begin at the octave and gradually are divided in half until tones closer than an interval of a minor second are reached. Figure 1.2 shows the harmonic series with the tonal center of the horn players' C, because the modern day single and double horns are pitched in F concert. Previous methods of related literature reviewed either begin on pitches of the F harmonic series or feature the

⁵⁵ Patrick Richards, *A pedagogical guide and argument for using the harmonic series in teaching beginning and intermediate level horn students*, 2.

⁵⁶ *Ibid.*, 7.

second note learned as one in the F harmonic series, but do not mention the series. The Teuber method, however, makes exercises on the harmonic series a major component of the method's organization, and includes an entire section dedicated to "Melodic Studies for the Natural Horn." He cites the importance of using these melodic exercises as transposition exercises in all keys and emphasizes the importance of strengthening the ear-embouchure relationships by becoming more aware of the nature of the instrument.⁵⁷

To move progressively in the staircase model, students should build upon their free and mouthpiece buzzing by connecting the mouthpiece to the receiver and making a note on the horn. To draw from related literature, exercises such as the first in previous method books such as the Clevenger, Howe, Yancich, Pottag-Hovey, Teuber or Kinyon are appropriate, in that they all begin on either pitch 5 or 6 of the F harmonic series (E4 or G4, respectively). The next note introduced to students in these methods is either pitch 4 or 5 in the F harmonic series (C4 or E4, respectively) or a whole step down from G4 to F4. To adapt this exercise to cover notes more than staying within a tonal center of F major, providing a fingering for a particular harmonic series and transposition can chromatically modify the etude. In the example exercises below (Figures 3.4, 3.5, 3.6 and 3.7) a fingering (0 for nothing depressed, 1 for first valve, 2 for second valve, and 3 for third valve) and designated number in an OTS is identified on an exercise similar to Exercise No. 1 in the Howe method, separated by a colon. For example, pitch 6 in the F harmonic series will be labeled: F horn OTS: 6. By these designations and definitions, a

⁵⁷ Teuber, 29.

beginning student can understand where particular pitches fit within the harmonic series.

Exercises constructed will begin in C horn and move progressively upward through D^b, D, E^b, E, F, G^b, G, A^b, A, and B^b horns.⁵⁸

Figure 3.4. – F horn: (0), OTS 6 (G4) Exercise

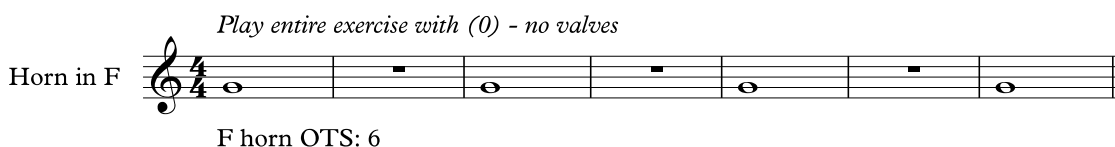


Figure 3.5. – E horn: (2), OTS 6 (F[#]4) Exercise

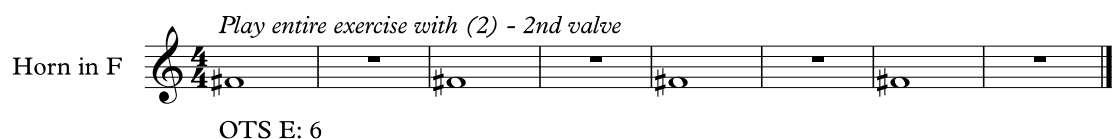


Figure 3.6. – E^b horn: (1), OTS 6 (F4) Exercise

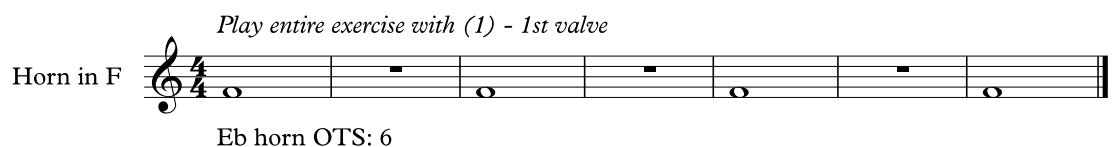
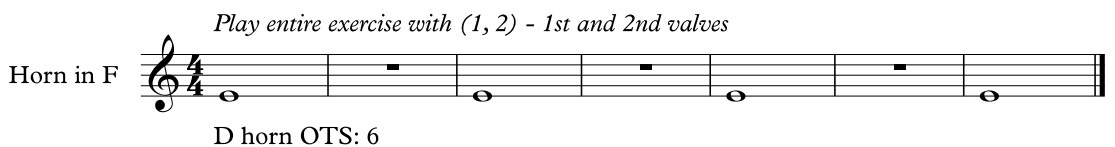


Figure 3.7. – D horn: (1, 2), OTS 6 (E4) Exercise



⁵⁸ The harmonic series corresponding to B horn (valve combination 1, 2, 3) is possible on the horn, but is not being utilized in this method. Because many methods introduce G4 as their first pitch, transitioning to exercises in C horn on a harmonic series that puts G4 as OTS partial 8 creates exercises where students begin on a familiar pitch and move stepwise to higher partials.

From establishing the first pitch of the method, and enumerated previously, exercises add a second note for the beginning player to practice. To incorporate the harmonic series in upward expansion of the horn's range, exercises should be developed to oscillate between already acquired and practiced pitches and newer notes. To continue progressive development, pitches played should continue to follow stepwise patterns. Although Teuber's book enumerates exercises in harmonic series' without changing valves, the notes climb quickly beyond the most common first note of G⁴ and in an interval that is larger than stepwise. The following eighth note exercise (Figure 3.8), that also explores harmonic series higher and lower than the F harmonic series, stretches up to OTS pitches 8 and 9.

Figure 3.8. *Teuber – Exercise 7a*⁵⁹

The image shows a musical score for Exercise 7a, consisting of two staves. The top staff is labeled 'Horn in F' and the bottom staff is labeled 'Hn.'. Both staves are in 4/4 time. The Horn in F staff starts with a treble clef and a key signature of one flat (Bb). The Hn. staff starts with a treble clef and a key signature of two flats (Bb and Eb). Both staves contain eighth-note patterns. The Horn in F staff has two measures of eighth notes, followed by a repeat sign, and then another two measures of eighth notes, followed by a repeat sign. The Hn. staff has two measures of eighth notes, followed by a repeat sign, and then another two measures of eighth notes, followed by a repeat sign. Both staves are marked 'Play 3x' and include repeat signs.

The difficulty of this exercise is the intervallic distance between OTS pitches 6 and 7, with the appearance of a minor third between G⁴ and B^b₄, and the appearance of OTS pitch 9 that is more than an octave and a half above the lowest note of this exercise. To ascend in stepwise motion but still use harmonic series of the horn, a switch to the C

⁵⁹ Teuber, *Progressive Exercises*, 8.

harmonic series will let the beginning horn player ascend above G4 in stepwise motion. Another complexity of this exercise is the inclusion of many notes of the harmonic series within one etude. A sequential step to ascending upward is to limit the range to two notes in oscillation, beginning on a comfortably performed pitch. Brophy wrote about this in *Technical Studies for Solving Special Problems on the Horn*, stating in his high register exercises section that the approach is essentially a half-step method. Brophy says, “The psychological advantages of this approach are obvious; if one *knows* that he can produce a full easy G at the top of the staff, for example, it should be simple to make the A^b, and if the A^b is easy the A should not be difficult. (It is after all, only a half step higher.)”⁶⁰ Modifying this etude to reflect these goals can make ascending a step higher in the range possible by a beginning horn student by changing the harmonic series the exercise is based on (OTS F) to a lower overtone series. Altering the harmonic series in this example (Figure 3.9) to the C harmonic series, and making G4 the tonal center, while preserving rhythmic quality of this etude, can create an oscillation exercise for beginning horn players to practice ascending higher than G4. Harmonic series pitch numbers were added to illustrate the smaller intervallic distance between upper series pitches.

⁶⁰ Timothy Brophy, *Technical Studies for Solving Special Problems on the Horn*, 11.

Figure 3.9. *Modified Teuber Exercise 7a – Applying C Harmonic Series*

C horn: (1, 3)

Horn in F

Hn.

The benefits of this kind of exercise maintain the same psychological mindset of positivity that both Brophy and Farkas believe is critical to high range acquisition and horn playing, as well as makes higher pitches accessible to younger players by reliance on air-column and embouchure instead of changed fingerings. This exercise also practices and prepares the student for the lip trill, similar to an etude that Kopprasch developed in his *Sixty Studies for Horn*.⁶¹ Like Kopprasch's etude, this type of exercise can be transposed to any other harmonic series for the additional practice and ability to expand the high range in a stepwise motion without more than two notes to overwhelm the beginning horn player as seen in Figures 3.10 and 3.11.

Figure 3.10. *Modified Teuber Exercise 7a – Applying D^b Harmonic Series*

Db horn: (2, 3)

Horn in F

Hn.

⁶¹ Georg Kopprasch, *Sixty Studies for Horn*, 3.

Figure 3.11. *Modified Teuber Exercise 7a – Applying D Harmonic Series*

D horn: (1, 2)

The image shows a musical score for two parts: Horn in F and Hn. (Horn). Both parts are in 4/4 time and consist of four measures. The Horn in F part starts with a treble clef and a key signature of one flat (Bb). The Hn. part starts with a treble clef and a key signature of one flat (Bb). Both parts feature a sequence of eighth notes in the first measure, followed by a quarter rest in the second measure, and then a sequence of eighth notes in the third and fourth measures. The notes are: Horn in F: Bb4, Bb4, Bb4, Bb4, Bb4, Bb4, Bb4, Bb4; Hn.: Bb4, Bb4, Bb4, Bb4, Bb4, Bb4, Bb4, Bb4. The fingerings are indicated by numbers 8 and 9 below the notes.

Another modification to this exercise is to ascend higher and add oscillations between series' of three pitches in a paradigm. Although limited in range, the previous etudes are useful. Often times in any written music, the horn player must place across a greater range than that of a major second in the high range, therefore expanding to stepwise motion between three notes creates a larger area for higher note acquisition and range extension. To build upon the previous exercises (Figures 3.9, 3.10 and 3.11) changing the pitches in the C harmonic series to add a third note in the ascending paradigm allows for greater range extension to be practiced, as shown in Figure 3.12. As with the previously modified etudes, different harmonic series' can be applied to Figure 3.12 to allow the student to practice ascending higher in range.

Figure 3.12. *Modified Teuber Exercise 7a* – Applying C Harmonic Series/Ascending in a Three Note Sequence

C horn: (1, 3)

Horn in F

Hn.

More overtone series pitches can be added to etudes similar to Figure 3.12 to increase range when applying different harmonic series'. The beginning of this Brophy exercise (Figure 3.13) in his chapter on “High Register Exercises” illustrates an example of adding extra overtone series pitches in this progressive model in many harmonic series’ to expand range.

Figure 3.13. *Brophy – High Register Exercise No. 6*⁶²

Horn in F

Hn.

Moving in stepwise motion upward on the overtone series is an effective method of expanding the high range for the beginning horn player. In an exercise with elements of those in Figure 3.13, difficulties in changing fingerings are alleviated in range

⁶² Brophy, *Technical Etudes*, 16.

expansion. The ability to expand upward to any given pitch in stepwise motion on harmonic series pitches may give the beginning horn player more success than attempting etudes with large intervallic leaps and many different fingerings. Another advantage of this exercise is a beginning horn player learning to traverse across large ranges in a single paradigm. Frequently in music, horn players are asked to ascend in range over large intervallic distances. A technique that can aid in players ascending in large leaps is to fill in the missing notes between the lowest and highest pitches of the leap. Etudes based on components of Figure 3.13 support navigation of large intervallic distances by practicing ascent into a higher range by filling in the notes between larger interval leaps upward.

Ascending into the high range is often met with intervallic leaps larger than a major second. After stepwise motion exercises have been practiced, etudes should include ascension in range between non-adjacent harmonic series partials. Stepwise motion between adjacent harmonic series practices ascending in range by small intervals. To practice leaping in larger intervals, exercises can be developed to practice specific intervallic relationships among overtone partials. Etudes including both two and three note paradigms of ascension in both adjacent and non-adjacent overtone partials gradually increase range extension. The following examples (Figures 3.14 and 3.15) illustrate how practicing in a lower range beginning on C4 or E4 can

rehearse intervals of thirds and fifths in adjacent and non-adjacent harmonic series partials. This exercise can be transposed to any other overtone series for range extension.⁶³

Figure 3.14. *Adjacent Harmonic Series Exercise – Large Intervallic Distance Practice*

F horn: (0)

Figure 3.15. *Non-adjacent Harmonic Series Exercise – Large Intervallic Distance Practice*

F horn: (0)

⁶³ When OTS partial 7 and 11 are introduced (OTS partial 11 included in Figure 3.16), some time should be taken to discuss intonation tendencies of these harmonic series partials. Because OTS partials 7 and 11 are inherently flat and sharp, respectively, some time can be taken with the student to discuss what right hand adjustments should be made in the bell to make the pitch in tune. However, teachers may also make the decision to allow the partials to stay true to their inherent intonation without adjustment and allow the student to focus on achieving higher pitches rather than fix intonation with certain partials.

The same large intervallic distance preparation can be practiced among upper harmonic series partials. Beginning on pitch 8 and moving in non-adjacent partials upward, several large intervallic distances can be rehearsed. The following example (Figure 3.16) between non-adjacent partials demonstrates that thirds, fourths, and fifths can be practiced in the upper range of the horn in the collective of harmonic series.

Figure 3.16. *Non-adjacent Harmonic Series Exercise – Large Intervallic Distances* (third, fourths, and fifths) Practice

C horn: (1, 3)

Horn in F

8 10 8 10 8 10 8 10 8 8 11 8 11 8 11 8 11 8

Hn.

8 12 8 12 8 12 8 12 8

Music often includes ascending passages that move in both stepwise motion and large intervallic distances. Exercises in Teuber’s book shown in Figure 3.8 demonstrate an exercise that uses all harmonic series partials and expands the range to encompass both large and small intervals. The advantages of these exercises are the ability to cover a wide range of pitches in a given harmonic series without concern of missing notes.

To combine both into an exercise, patterns can be practiced that develop both adjacent and non-adjacent OTS partials. Jeffrey Agrell describes these patterns as “shapes” of notes on harmonic series partials to practice intervals.⁶⁴ For example, an

⁶⁴ Jeffrey Agrell, “Horn Studio.” *Overtone Series*. Web. 24 Jan. 2016.

“M” shape that practices both adjacent and non-adjacent OTS partials is shown in Figure 3.17 on the F OTS. This particular shape can also be extended as a large interval exercise, as shown in Figure 3.18. Many different “shapes” can be created and manipulated to fit specific needs of the students.

Figure 3.17. “M” Shaped Pattern of Adjacent and Non-adjacent OTS Partial

Horn in F

4 6 5 6 4 6 5 6 4 6 5 6 4 5 7 6 7 5 7 6 7 5 7 6 7 5

F: 0

Hn.

6 8 7 8 6 8 7 8 6 8 7 8 6

Figure 3.18 “M” Shaped Pattern of Adjacent and Non-adjacent OTS Partial with Larger Intervals

Horn in F

4 7 5 7 4 7 5 7 4 7 5 7 4 4 8 5 8 4 8 5 8 4 8 5 8 4

F: 0

Hn.

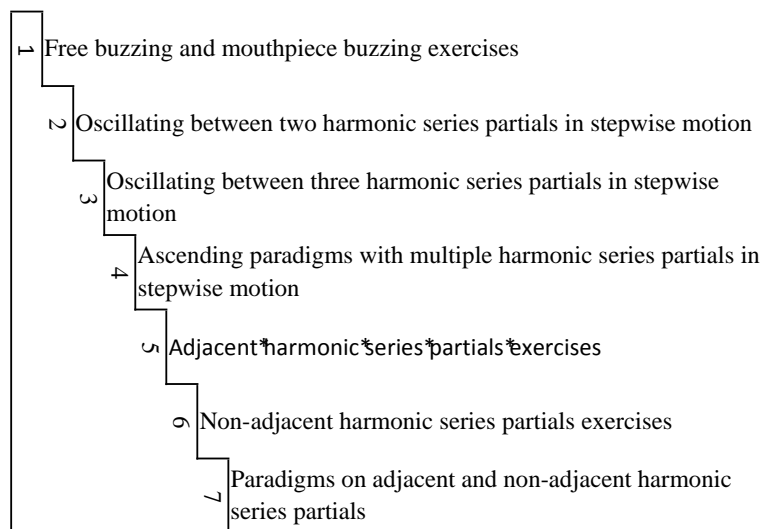
4 9 5 9 4 9 5 9 4 9 5 9 4

As these steps progress, valves can be introduced gradually after an exercise has been done on the harmonic series. In this manner, students are practicing skills on the overtone series and acclimating their air-column, embouchure and muscle memory of the lips to note patterns before the addition of a different fingering and harmonic series. It is

crucial that students work with the harmonic series on these high range expansion fundamentals by the alleviation of fingering choices and harmonic series differences in length of the horn. As well, ascending in overtone series creates a positive mindset for a student to feel as though they can achieve notes that are only a short distance away from notes learned early in study.

In summary, a progressive step-by-step of high range expansion uses a sequenced pattern of built upon fundamentals to ascend in range. In establishment of this progressive method, a staircase model has been created to illustrate the step-by-step advancement from technical skill of ascending in range to another. Each step builds upon each other, and this model serves as a guide to the etudes of the progressive method.

Figure 3.19. Staircase Model of the Progressive Method



The steps enumerated are: 1) Free buzzing and mouthpiece buzzing, 2) Oscillating between two harmonic series partials in stepwise motion, 3) Oscillating between three

harmonic series partials in stepwise motion, 4) Ascending paradigms with multiple harmonic series partials in stepwise motion, 5) Adjacent harmonic series partials exercises, 6) Non-adjacent harmonic series partials exercises, and 7) Paradigms on adjacent and non-adjacent harmonic series partials. As related literature studied revealed organizations of methods, this model serves as an organization of the fundamental construction of each etude; each exercise of the method is based upon the ascending steps of the model to progressively sequence high range expansion.

Significant factors included in the construction of these exercises are related to the musical lines of study drawn from wind band method books. Initial etudes, whether written for horn-only pages or full band arrangement, are often short in length and exhibit characteristics of familiarity to the student when performing. Methods' introductory musical lines, remaining unchanged from the earliest of band methods, are primarily filled with nursery rhymes, folk songs, old favorites, and other familiar tunes. Although this progressive method will not include popular or familiar tunes to practice range expansion, the musical content of each etude will be original and not of a predictable nature. By using familiar melodies, wind band method books not only aurally train students for accuracy and intonation on their instruments, but also keep them engaged by recognizing what they are playing. Another way that students stay interested in some musical lines in these band methods is the splitting of parts into duet or full band arrangements that are included within the etudes. For the beginning student, often the band is playing in unison for a large portion of their first months of study. Variance to

the normal unison amongst the class and the addition of harmony relates more to the music that students listen to today, creating a more appealing exercise to play.

In the beginning stages of learning pitches in wind band methods, variation of exercise comes through the rapid addition of notes to a students' range. Following the established progressive sequence, inclusion of new notes to the range is gradual and based on oscillation from previously practiced pitches on multiple harmonic series. To maintain these goals of the progressive study, variance can be introduced in single or limited pitch paradigms through rhythmic complexity in call and response collaboration between teacher and student. Call and response is defined as the performance of musical phrases in alternation by different voices or distinct groups, use in opposition in such a way as to suggest that they answer one another, possibly involving contrasts of volume, pitch, or timbre.⁶⁵ To practice sound production and accuracy, call and response exercises can be utilized to make an engaging exercise to practice upward range expansion. Also, with written call and response exercises, students are practicing music reading skills by seeing the shape or gesture they are emulating with their buzzing or notes. Students focusing on repeating a teacher in call and response also can be exposed

⁶⁵ Barry Kernfeld. "Call and response." *The New Grove Dictionary of Jazz*, 2nd ed. Ed. Barry Kernfeld. *Grove Music Online*. *Oxford Music Online*. Oxford University Press. Web. 16 Jan. 2016.
<<http://www.oxfordmusiconline.com/subscriber/article/grove/music/J072500>>.

to more rhythmic complexity in notation and performance. By copying each other in call and response, a student can practice fundamental technique in an engaging exercise.

Although defining engagement for a student is impossible, etudes can be musically interesting for the students to play. This can be accomplished by rhythmic variation, avoidance of predictable patterns, and the presence of a duet part being performed simultaneously. The goal of this progressive method is for the student to stay engaged and motivated to practice with etudes that move sequentially in fundamental technique acquisition by shorter to longer etude lengths.

CHAPTER IV

PROGRESSIVE EXERCISES FOR HIGH RANGE EXPANSION

The following exercises correspond with the aforementioned pedagogy in sequential progression of high range expansion. Following the exercises, Chapter 5 contains a brief anecdote discussing the fundamentals of construction, goals, and challenges of each exercise. The exercises are separated by seven categories according to the staircase model defined in Figure 3.17. The categories are:

1. Free buzzing and mouthpiece buzzing exercises
2. Oscillating between two harmonic series partials in stepwise motion
3. Oscillating between three harmonic series partials in stepwise motion
4. Ascending paradigms with multiple harmonic series partials in stepwise motion
5. Adjacent harmonic series partials exercises
6. Non-adjacent harmonic series partials exercises
7. Paradigms on adjacent and non-adjacent harmonic series partials

Free Buzzing and Mouthpiece Buzzing Exercises -1

Buzzing Around - 1A

The musical score for "Buzzing Around - 1A" is divided into three systems, each for a pair of horns (Horn A and Horn B). The notation is in treble clef and includes numbered notes (1-4 for the first system, 1-8 for the others) and slurs indicating phrasing or breath control.

System 1: Horn A and Horn B parts. Horn A has notes 1, 2, 3, 4. Horn B has notes 1, 2, 3, 4. Both parts have slurs over the notes.

System 2: Horn A and Horn B parts. Horn A has notes 1, 2, 3, 4, 5, 6, 7, 8. Horn B has notes 1, 2, 3, 4, 5, 6, 7, 8. Both parts have slurs over the notes.

System 3: Horn A and Horn B parts. Horn A has notes 1, 2, 3, 4, 5, 6, 7, 8. Horn B has notes 1, 2, 3, 4, 5, 6, 7, 8. Both parts have slurs over the notes.

Up and Down -1B

Horn A
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &

Horn B
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &

5
 Hn. A
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &

Hn. B
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &

7
 Hn. A
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &

Hn. B
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 &

Climbing Higher -1C

Horn A
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &

Horn B
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &

3
 Hn. A
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &

Hn. B
 1 & 2 & 3 & 4 &
 1 & 2 & 3 & 4 &

Oscillation of Two Harmonic Series Partial in Stepwise Motion⁶⁶ - 2

Back and Forth⁶⁷ - 2A

Andante

C: 1 3

Exercise 2A in D^b horn OTS.

Andante

Db: T-2 3

⁶⁶ This specific exercise has been transposed to fit each harmonic series of the F and B^b side of the horn to illustrate how paradigms should be transposed per OTS performed in. Harmonic series numbers have also been added for the student to understand where in the different OTS the partial sits. It is the responsibility of the student to transpose each etude forthcoming from C horn OTS upward to acquire the technique and intended goal of range extension of the progressive exercises.

⁶⁷ When introducing OTS partial 11, intonation with the right hand position needs to be practiced to lower the pitch to sound a minor second above OTS partial 10.

Exercise 2A in D horn OTS.

Andante

Horn A

Horn B

D: 1 2

Exercise 2A in E^b horn OTS.

Andante

Horn A

Horn B

E^b: 1

Exercise 2A in E horn OTS.

Andante

Horn A

Horn B

E: 2

Exercise 2A in F horn OTS.

Andante

Horn A

Horn B

10 11 10 11 10 11 10 11 10

F: 0

Exercise 2A in G^b horn OTS.⁶⁸

Andante

Horn A

Horn B

10 11 10 11 10 11 10 11 10

Gb: F2 3

⁶⁸ The presence of “T” after the OTS designation per exercise represents the addition of the B^b trigger to the fingering.

Exercise 2A in G horn OTS.

Andante

Horn A

Horn B

8 9 8 9 8 9 8 9 8

10 11 10 11 10 11 10 11 10

G: T-1 2

Exercise 2A in A^b horn OTS.

Andante

Horn A

Horn B

8 9 8 9 8 9 8 9 8

10 11 10 11 10 11 10 11 10

Ab: T-1

Exercise 2A in A horn OTS.

Andante

Horn A

Horn B

8 9 8 9 8 9 8 9 8

10 11 10 11 10 11 10 11 10

A: T-2

Exercise 2A in B^b horn OTS.

Andante

Horn A

Horn B

8 9 8 9 8 9 8 9 8

10 11 10 11 10 11 10 11 10

Bb: T-0

Small Steps -2B

Andante

Horn A

Horn B

C: 1 3

Smoother Strides -2C

Moderato

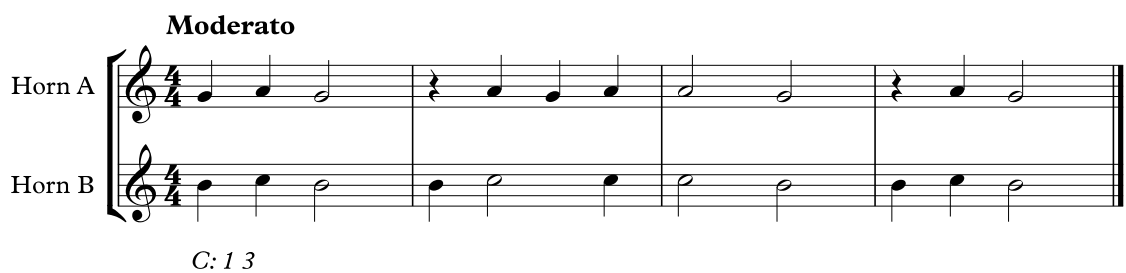
Horn A

Horn B

C: 1 3

Firmly Stepping – 2D

Moderato



Horn A

Horn B

C: 1 3

Moving Parts – 2E

Allegro



Horn A

Horn B

C: 1 3

Quick Changes – 2F

Vivace



Horn A

Horn B

C: 1 3

Exercises Oscillating Between Three OTS Partial in Stepwise Motion - 3

Three Up – 3A

Andante

Horn A

Horn B

C: 1 3

Fluid Motion – 3B

Moderato

Horn A

Horn B

C: 1 3

Jig in Two – 3C

Moderato

Horn A

Horn B

C: 1 3

Repeat After Me – 3D

Moderato

Horn A

Horn B

C: 1 3

Detailed description: This musical score is for a section titled 'Repeat After Me – 3D' at a 'Moderato' tempo. It features two staves, Horn A and Horn B, in 4/4 time. Horn A begins with a quarter note G4, followed by eighth notes A4 and B4, then a quarter note A4, and a half note G4. Horn B starts with a quarter rest, followed by eighth notes G4 and A4, then a quarter note B4, and a half note A4. Both parts continue with similar rhythmic patterns of eighth and quarter notes, ending with a double bar line. A rehearsal mark 'C: 1 3' is placed below the staves.

Bouncing Up – 3E

Allegro

Horn A

Horn B

C: 1 3

Detailed description: This musical score is for a section titled 'Bouncing Up – 3E' at an 'Allegro' tempo. It features two staves, Horn A and Horn B, in 2/4 time. Horn A starts with a quarter note G4, followed by eighth notes A4 and B4, then a quarter note A4, and a half note G4. Horn B begins with a quarter note G4, followed by a quarter note A4, then a half note B4, and a quarter note A4. The parts continue with rhythmic patterns of eighth and quarter notes, ending with a double bar line. A rehearsal mark 'C: 1 3' is placed below the staves.

Offbeat-Kilter – 3F

Allegro

Horn A

Horn B

C: 1 3

Detailed description: This musical score is for a section titled 'Offbeat-Kilter – 3F' at an 'Allegro' tempo. It features two staves, Horn A and Horn B, in 4/4 time. Horn A starts with a quarter note G4, followed by eighth notes A4 and B4, then a quarter note A4, and a half note G4. Horn B begins with a quarter note G4, followed by a quarter note A4, then a half note B4, and a quarter note A4. The parts continue with rhythmic patterns of eighth and quarter notes, ending with a double bar line. A rehearsal mark 'C: 1 3' is placed below the staves.

Paradigms with Multiple OTS Partial in Stepwise Motion -4

The Lower Seven⁶⁹ - 4A

Moderato

Horn A

Horn B

C: 1 3

Hn. A

Hn. B

Rising Up – 4B

Andante

Horn A

Horn B

C: 1 3

Hn. A

Hn. B

⁶⁹ As with OTS partial 11, introduction of OTS partial 7 should be practiced with right hand adjustment for intonation purposes.

Eight by Sixteen – 4C

Adagio

Horn A

Horn B

C: 1 3

Copycat – 4D

Allegro

Horn A

Horn B

C: 1 3

Ostinato Time – 4E

Moderato

Horn A

Horn B

C: 1 3

4

Hn. A

Hn. B

Ragtime-esque – 4F

Vivace

Horn A

Horn B

C: 1 3

5

Hn. A

Hn. B

Exercises of Adjacent OTS Partial - 5

Fours, Fives and Sixes -5A

Moderato

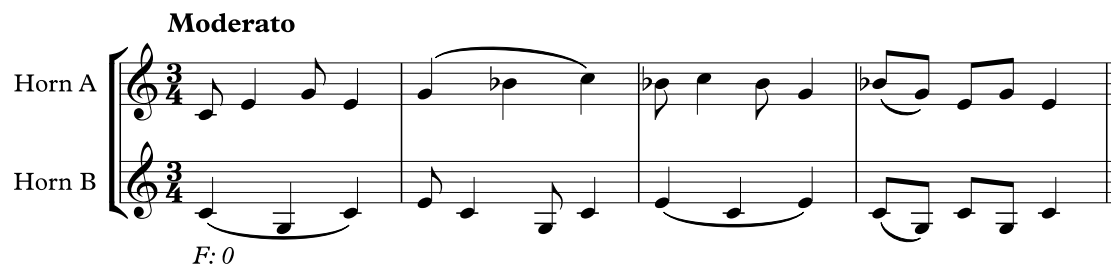
Horn A

Horn B

F: 0

Stretching Higher – 5B

Moderato



Horn A

Horn B

F: 0

Side-by-Side – 5C

Allegro



Horn A

Horn B

F: 0

Discordant Tones – 5D

Andante



Horn A

Horn B

F: 0

5

Hn. A

Hn. B

A Waltzing Bass Line – 5E

Presto

Horn A

Horn B

F: 0

Hn. A

Hn. B

Next-Door Fanfare – 5F

Maestoso

Horn A

Horn B

F: 0

Hn. A

Hn. B

Exercises of Adjacent and Non-adjacent OTS Partial - 6

Glissing and Slurring – 6A

Andante

Horn in F

C: 1 3

7

Hn.

11

Hn.

7

11

Skipping on Over – 6B

Andante

Horn A

Horn B

C: 1 3

C: 1 3

Hunting Overtone - 6C

Moderato

Horn A

Horn B

C: 1 3

C: 1 3

Leaps and Bounds – 6D

Allegro

Horn A

Horn B

C: 1 3

Detailed description: This musical score is for two horns, Horn A and Horn B, in 2/4 time. The tempo is marked 'Allegro'. The key signature has one flat (B-flat). The score consists of 8 measures. Horn A and Horn B play a rhythmic pattern of eighth and quarter notes. The key signature is one flat (B-flat).

Jumping in Thirds – 6E

Allegro

Horn A

Horn B

C: 1 3

9

Hn. A

Hn. B

Detailed description: This musical score is for two horns, Horn A and Horn B, in 2/4 time. The tempo is marked 'Allegro'. The key signature has one flat (B-flat). The score consists of 9 measures. Horn A and Horn B play a rhythmic pattern of eighth and quarter notes. The key signature is one flat (B-flat).

Wide Range Waltz – 6F

Vivace

Horn A

Horn B

C: 1 3

8

Hn. A

Hn. B

13

Hn. A

Hn. B

Lyrical Leaping – 6G

Adagio

Horn A

Horn B

C: 1 3

Long Distance Echoes – 6H

Moderato

Horn A

Horn B

C: 1 3

Spanning Great Lengths – 6I

Vivace

Horn A

Horn B

C: 1 3

7

Hn. A

Hn. B

13

Hn. A

Hn. B

Paradigms with Adjacent and Non-adjacent OTS Partial with Changing Harmonic Series – 7

Expanding Higher – 7A

Moderato

The score consists of six systems, each with two staves: Horn A (top) and Horn B (bottom). The tempo is marked **Moderato**. Each system shows a melodic line in Horn A and a supporting line in Horn B. Fingerings are indicated by numbers below the notes. A dashed vertical line separates the first and second measures of each system.

System 1: Horn A: 4 5 6 7 8 7 6 5 4; Horn B: 4 5 6 7 8 7 6 5 4

System 2: Horn A: 4 5 6 7 8 9 8 7 6 5 4; Horn B: 4 5 6 7 8 9 8 7 6 5 4

System 3: Horn A: 4 5 6 7 8 9 10 9 8 7 6 5 4; Horn B: 4 5 6 7 8 9 10 9 8 7 6 5 4

System 4: Horn A: 4 5 6 7 8 9 10 11 10 9 8 7 6 5 4; Horn B: 4 5 6 7 8 9 10 11 10 9 8 7 6 5 4

System 5: Horn A: 4 5 6 7 8 9 10 11 12 11 10 9 8 7 6 5 4 3 4; Horn B: 4 5 6 7 8 9 10 11 12 11 10 9 8 7 6 5 4 3 4

System 6: Horn A: 4 5 6 7 8 9 10 11 12 13 12 11 10 9 8 7 6 5 4 3 4; Horn B: 4 5 6 7 8 9 10 11 12 13 12 11 10 9 8 7 6 5 4 3 4

Classical Melody – 7B

Moderato
C: 1 3

Horn A *mf*

Horn B *mf*
F: 0 Bb: T-0 F: 0 C: 1 3

6

Hn. A *mp*
Bb: T-0 F: 0 C: 1 3 Bb: T-0

Hn. B *mp*
C: 1 3 F: 0 A: T-2 G: T-1 2

12

Hn. A *mp*
F: 0 C: 1 3

Hn. B *mp*
Bb: T-0 A: T-2 G: T-1 2

17

Hn. A *mf*
C: 1 3 F: 0

Hn. B *mf*
F: 0 C: 1 3 F: 0

A Bluesy Tune – 7C

Allegro - "swung ♩ note"

Horn A

F: 0

Horn B

6

Hn. A

Bb: T-0

Hn. B

11

Hn. A

F: 0 *C: (1, 3)* *Bb: T(0)*

Hn. B

16

Hn. A

F: (0)

Hn. B

Soaring Theme – 7D

Vivace

The musical score is for a piece titled "Soaring Theme – 7D" in a "Vivace" tempo. It is written for two horns, Horn A and Horn B, in a key signature of one flat (Bb) and a 3/4 time signature. The score consists of six systems of staves, each with a Horn A staff and a Horn B staff. The music features a variety of dynamic markings and fingering numbers.

System 1: Horn A starts with a whole note rest, followed by a half note Bb, a quarter note Bb, and a half note Bb. Horn B plays a continuous eighth-note pattern. Dynamics: *mf* (Horn A), *mp* (Horn B). Fingering: Eb: 1 (Horn A), F: 0 (Horn B).

System 2: Horn A plays a half note Bb, a quarter note Bb, and a half note Bb. Horn B continues the eighth-note pattern. Dynamics: *mp* (Horn A), *p* (Horn B). Fingering: Eb: 1 (Horn A), Ab: T-1 (Horn B).

System 3: Horn A plays a half note Bb, a quarter note Bb, and a half note Bb. Horn B continues the eighth-note pattern. Dynamics: *f* (Horn A), *mf* (Horn B). Fingering: Ab: T-1 (Horn A), Bb: T-0 (Horn B).

System 4: Horn A plays a half note Bb, a quarter note Bb, and a half note Bb. Horn B continues the eighth-note pattern. Dynamics: *mf* (Horn A), *mp* (Horn B). Fingering: Ab: T-1 (Horn A), Bb: T-0 (Horn B).

System 5: Horn A plays a half note Bb, a quarter note Bb, and a half note Bb. Horn B continues the eighth-note pattern. Dynamics: *mp* (Horn A), *mp* (Horn B). Fingering: Ab: T-1 (Horn A), Bb: T-0 (Horn B).

System 6: Horn A plays a half note Bb, a quarter note Bb, and a half note Bb. Horn B continues the eighth-note pattern. Dynamics: *f* (Horn A), *f* (Horn B). Fingering: Eb: 1 (Horn A), Ab: T-1 (Horn B).

Caribbean Shanty – 7E

Allegro

G: T-1 2

Horn A

Horn B

D: 1 2

mf

f

mf

mp

f

f

7

12

The musical score is for two horns, Horn A and Horn B, in 4/4 time. The tempo is marked 'Allegro'. The key signature has one sharp (F#). The score is divided into three systems. The first system (measures 1-6) features Horn A with a melodic line and Horn B with a rhythmic accompaniment. The second system (measures 7-11) continues the melodic and rhythmic patterns. The third system (measures 12) concludes the phrase with a final cadence. Dynamics include mezzo-forte (mf), forte (f), and mezzo-piano (mp). Accents are used to emphasize certain notes in measures 12 and 13.

Hoe-Down – 7F

Allegro

Horn A *Bb: T-0* *mf* *Ab: T-1* *C: 1 3* *Ab: T-1*

Horn B *mf* *Bb: T-0* *Db: T-2 3*

Hn. A *Bb: T-0* *Eb: 1* *F: 0* *Bb: T-0* *Eb: 1* *Bb: T-0*

Hn. B *F: 0* *Bb: T-0* *Eb: 1* *Bb: T-0* *F: 0* *Bb: T-0*

Hn. A *Ab: T-1* *C: 1 3* *Ab: T-1* *Bb: T-0* *Eb: 1* *F: 0* *Bb: T-0*

Hn. B *Bb: T-0* *Db: T-2 3*

Flying Skyward – 7G

Allegro

Horn A

Horn B

f *F: 0* *Eb: 1* *F: 0* *C: 1 3* *F: 0* *Eb: 1* *F: 0* *C: 1 3*

9

Hn. A

Hn. B

F: 0 *Eb: 1*

16

Hn. A

Hn. B

Gb: T-2 3 *E: 2*

25

Hn. A

Hn. B

Gb: T-2 3 *E: 2* *Eb: 1* *Eb: 1*

34

Hn. A

Hn. B

E: 2 *F: 0* *C: 1 3* *F: 0*

41

Hn. A

Hn. B

Eb: 1 *F: 0* *F: 0* *Eb: 1* *Gb: T-2 3*

CHAPTER V
PROGRESSIVE EXERCISE COMMENTARY

Free Buzzing and Mouthpiece Buzzing Exercises

These exercises are call and response between a student and teacher. The graphic notation indicates a shape for each player to emulate. The goals of these etudes are to keep the shapes of each measure in a consistent tempo with the subdivided pulse provided while acquiring flexibility with the free buzz and mouthpiece buzz to ascend and descend in given patterns.

Buzzing Around (1A)

This exercise introduces the student to buzzing, with or without the mouthpiece, in an ascending manner. The pulse is shown in quarter notes so that the player not playing can count the quarter notes to keep a consistent tempo. Each pattern is notated in graphic notation as a gradual ascent at a lower part of the student's range. Although on a staff, this exercise is not meant to be based on matching the note produced by the player; it simply covers a pattern and gradual upward motion of pitch. At the beginning of each measure, the pitch of the buzz gradually rises and ascends and descends through the rest of the bar in various patterns. The notation of the buzz placement on the staff is important to note what approximate amount of range the pitch is to ascend. For example, compared with the first pattern shown in Horns A and B, measure three's notation indicates that the buzzing ascent will raise to a higher pitch than that of measure one, and

measure five indicates the highest pitch the buzz should reach through the exercise. This exercise is developed so that the student may grasp the physical skill of raising the pitch and may practice in various patterns of ascending and descending in pitch. Call and response is important in this aspect because a student can copy a teacher's patterns of raising and lowering the pitch while physically gaining the technical skill of ascending in range while buzzing.

Up and Down (1B)

This exercise features the same pulse concept as the previous etude in a shorter subdivision; the player who is not playing can count the eighth notes of the pulse. In this etude, the player is ascending and descending in more rapid motion than the previous exercise. This exercise also features a larger range of ascent and descent, in that the student is descending from the highest pitch of buzz they achieve in measure five to the starting pitch at the beginning of the measure. Each time the student rearticulates a new buzzing pattern, they always beginning from the approximate pitch they began the measure with.

Climbing Higher (1C)

This exercise is intended that a student experiment with buzzing to the upper extreme to experiment with ascending to a much higher pitch than where they began the measure. In the third and fourth measures, the buzzing pattern ascends to the extreme high register, descends to a lower pitch, and ascends again to a higher pitch. This is for the purpose of ascending and descending in the upper extreme of the high range of the free buzz and mouthpiece buzz.

Oscillation of Two Harmonic Series Partial in Stepwise Motion

The construction of these etudes is based on moving in stepwise motion between two adjacent partials of the harmonic series. Each exercise begins in C horn (valve combination 1, 3) and has the possibility to be transposed to any other ascending harmonic series. It is at the teacher's pedagogical discretion to how far and with what speed to introduce new harmonic series. Exercises begin with slurring between partials and moving to articulation between each pitch change. The goal of these exercises is to ascend higher into the range more accessibly; therefore, practicing without articulation initially on higher pitches follows the progressive sequence from free buzzing or mouthpiece buzzing.

Each of the two parts of the exercises operates in the same harmonic series. Teachers using these exercises have the option of switching parts with the student immediately on playing the exercise through in a harmonic series, or ascending through a number of different series before switching parts. Either can be used pedagogically to expand the student's range, with crucial importance that the student plays Horn A first when attempting an exercise. If choosing to switch parts immediately, the student has an option to encounter OTS partials 10 and 11 in the same harmonic series to expand range. If the teacher chooses to transpose the exercise to other harmonic series chromatically, four transpositions upward will have the student performing in the same range as Horn B in the initial C horn transposition. It is the teacher's pedagogical decision with either

option to expand the student's range upward. Before these exercises are attempted, the teacher may choose to have students preliminarily perform aural exercises such as those suggested in Figures 3.9-3.11.

Back and Forth (2A)

This exercise introduces the student initially to transition from buzzing exercises into sound production on the horn by ascending slightly higher in range by stepwise motion. Each voice moves in contrapuntal motion so that the student moves in likewise constant harmony with the duet part. The note values are quarter and half notes so that the student can move slowly on either part and can learn the physicality needed in air column and embouchure manipulation to ascend in range.

Small Steps (2B)

The two parts of this etude are no longer always moving in contrapuntal motion, forcing each player to count and focus independently on their part, while still maintaining the goals of slurring stepwise from OTS partial 8 to 9. Eighth notes are introduced in measure three to mirror the faster oscillations in the buzzing exercises.

Smooth Strides (2C)

The first two measures of this exercise is a form of rhythmic call and response between Horn A and B. With faster oscillation of four eighth notes at the beginning, Horn B can set a successful speed for Horn A to perform at to get rhythmic integrity of oscillating between G4 and A4, initially. The exercise also practice oscillation of OTS partial 8 to 9 by beginning the slur on the upper partial 9, training the student for slurs to lower pitches. The last two measures show both parts moving again in contrapuntal

motion on syncopated beats of the third measure. This can prepare the student to anticipate and count shorter rest durations when performing any slur or articulation in music.

Firmly Stepping (2D)

Each pitch in this exercise is articulated so that students can practice tonguing each note without fingering change. The teacher's discretion is required to decide whether articulation should be legato, staccato, marcato, or mixed, depending on the level and progress of the student. Building upon previous exercises, the parts primarily move in contrapuntal motion, but as in measures two and four, Horn B has notes on the downbeats that Horn A does not have, requiring Horn A to count independently. The rhythm is all quarter and half notes so that the student can avoid the necessity of rapid tonguing interrupting their air column used to change pitch.

Moving Parts (2E)

This exercise introduces eighth note articulation in both Horns A and B to practice more rapid tonguing. The student is required to independently count their part to account for the moments where Horn A and Horn B do not move together. Noted dissonance occurs on beat 1 of measure three and resolves on beat 2. This exercise forces rhythmic independence as the etude ends on beat 3 and its upbeat.

Quick Changes (2F)

The meter introduced indicates the first example of compound meter seen in this method, requiring explanation of counting rhythms in a compound meter. This exercise is meant to introduce a more rapid tongue than the previous exercise in duple meter.

Rhythmic independence is capitalized on with a mixture of note and rest durations in this etude. Time should be taken to take apart individual beats of this to discuss how they look and sound in a compound meter.

Oscillation of Three Harmonic Series Partial in Stepwise Motion

Continuing in previous patterns, these exercises are constructed with similar goals to etudes with oscillation between two OTS partials. The first three exercises focus on slurring between three adjacent harmonic series partials, and the latter three feature articulation. These exercises also exhibit repeated pitches in parts with more frequency than previous exercises.

Increasing the number of adjacent harmonic series partials from two to three in these paradigms is significant. Small adjustments are needed with the air column and embouchure to stretch from OTS partial 8 to 9, as well as from 9 to 10. Bringing three OTS partials into the student's repertoire reinforces the physicality of moving about and being accurate in a series of three pitches, where three different, but related, air columns and embouchure adjustments are required. With more pitches comes more manipulation of the physical aspects of playing the horn, and forces the student to solidify technical concepts required for upward range extension. Before these exercises are attempted, the teacher may choose to have students preliminarily perform aural exercises such as those suggested in Figure 3.12.

Three Up (3A)

This exercise oscillates between OTS partials 8, 9, and 10 in contrapuntal slurred motion. No rests are used in this exercise so that the physical aspects of moving between partials can rely on a steady, uninterrupted air column.

Fluid Motion (3B)

This exercise features movement between the harmonic series partials in eighth notes within the measures. The goal of this etude is to control the motion and accuracy in pitch of the three OTS partials presented while slurring on the same fingering.

Jig in Two (3C)

This etude features identical rhythmic motion between the parts, building upon the previous compound meter exercise [B(6)]. The first measure shows Horns A and B moving together, but in contrary harmonic motion on beat 2, forming a perfect fifth. Oscillations after this beat are in thirds between the OTS partials for the rest of the etude. The reliance on parallel thirds and introduction of the perfect fifth suggests a learning opportunity for the student to know how to adjust intonation when playing a member of one of these intervals.

Repeat After Me (3D)

Horns A and B play a rhythmic call and response game in measures one and three of this exercise. Horn A begins measure one while Horn B joins with the same rhythm one beat later, joining together on beat 4. Measure three is similar with the roles reversed; Horn B begins the measure, followed by Horn A, ending in parallel motion in measure 4. The articulation of the performer playing on beat 1 in measures one and three

is important to repeat by the opposite player. Frequently, musicians are asked to play similar and repeated passages in a style they have heard another musician perform previously. This exercise is important for listening and matching articulation in similar musical phrases.

Bouncing Up (3E)

Horn A begins this etude with an eight-quarter-eighth rhythm, very different from Horn B's part, and forcing the student to play with rhythmic independence and accuracy. Measures three and four offer the same rhythm as the beginning as an antecedent phrase. Both Horns A and B play on syncopated beats in measures five and six together in parallel motion. This is so Horn A can listen and rely on the rhythmic integrity of Horn B to hold the tie over measure five to six accurately without extending the duration of the eighth note on the downbeat of measure six. This etude features a number of lower neighbor tones in both horn parts. This practices and draws on fundamentals of the previous exercises of two OTS partial oscillations, mixing them in with three OTS partial oscillations.

Offbeat-Kilter (3F)

This exercise relies heavily on independence of rhythmic counting in both Horn parts. Ties are held from the upbeat of beat 2 to 3 and the upbeat of beat 3 to 4 in both parts, requiring focus on subdivision and counting. The last measure, both parts are in parallel motion, enumerating only upbeats until beat 4, prompting practice on subdivision and internalizing pulse when playing.

Paradigms of Multiple Harmonic Series Partial in Stepwise Motion

These etudes progressively introduce harmonic series partials in exercises with goals similar to previous studies. The addition of higher OTS partials adds an increased level of difficulty for the student in ascending higher in the range because of the continued diminishing of space between partials. Typically, a horn player will not play upwards of G4 without exclusively using combinations of (2, 3), (1, 2), (1), (2), and (0) on the F horn, or with the addition of the B^b trigger and aforementioned combinations, because they use less tube length to blow through. In fact, valve combination (1, 3) is generally only used to play in the pedal register on G2. However, using this longer length of tubing and harmonic series to practice playing higher in the range is to train the lips to vibrate without assistance of shortening the instrument in a higher harmonic series. When a student can control and manipulate pitches accurately with a lower harmonic series fingering in upper OTS partials, a shorter and higher harmonic series fingering applied makes the note feel more accessible. Therefore, to gradually add these OTS partials in these exercises, students are being prepared and made comfortable with producing upper pitches on a longer length horn to make a typical fingering of an upper range note less difficult. Before these exercises are attempted, the teacher may choose to have students preliminarily perform exercises such as that suggested in Figure 3.13 out of Brophy's method.

The Lower Seven (4A)

This call and response includes OTS partial 7 to the repertoire of notes that have been practiced in these exercises. Although partial 7 does not extend the range upward,

its addition builds on buzzing patterns and previous fundamentals covered in other etudes of the necessity of practicing ascending and descending in pitch in one musical phrase. Also, the addition of this partial brings harmonic possibilities that have not been open to these exercises previously. By only playing with OTS partials 8-12 in previous etudes, possibilities in harmonic choice are limited to diatonic harmonies. With the addition of OTS partial 7, the possibility of outlining a \flat VII chord, where OTS partial 8 acts as tonic, is available.

Rising Up (4B)

The introduction of OTS partial 13 ascends to the highest harmonic series partial that these exercises will reach. OTS partial 13 is also an inherently flat partial, denoted by the accidental added to the $E^{\flat 5}$ present in measure three. Approached by stepwise motion, this harmonic partial is the first minor second in the adjacent partial sequence, and the purpose of this etude is to practice that physicality of changing the air column and embouchure to reflect a true minor second from OTS partial 12 to 13. In this etude, both Horns A and B play within the same range and series of pitches.

Eight by Sixteen (4C)

This exercise is designed to exclusively practice rapid slurred oscillation in and out of the thirteenth harmonic series partial. The rhythm of eighth note followed by two sixteenth notes, even at adagio, moves at a much faster pace than anything that has been written in etudes previously. This etude is also the first to begin on a pitch other than OTS partial 8. Horn A gets to practice beginning the exercise on a partial other than what is perceived to be the tonic pitch of G4.

Copycat (4D)

This articulated exercise begins with Horn A ascending in eighth notes and Horn B repeating the same pitches and rhythms in the first two measures. Measure three shows the two parts in parallel motion with eighth-two sixteenths rhythms and executing independent rhythms in the last measure. The goal of this etude is to articulate rapidly in ascending phrases to OTS partial 13, perform independently of the opposite part, and match articulation.

Ostinato Time (4E)

This exercise allows Horn A to play an independent melody line atop a repeated eighth note ostinato in Horn B's line. The difficulty of this etude is measure 4, when Horn A must begin the measure on rapid articulated oscillations of E^b3 to D3. This etude encourages practice on articulation in the higher range on rapid oscillations of upper overtone partials.

Ragtime-esque (4F)

This exercise features the most complex rhythms seen in this series of exercises. The first five measures have each horn part moving in parallel motion, and practice should be done to discuss rhythms such as the sixteenth-eighth-sixteenth rhythm presented on beat 1 of measure 2. Horn A spans the range from OTS partial 7 to 13 in this exercise in rapid articulation, while also beginning the exercise on B4, or OTS partial 10.

Exercises of Adjacent Harmonic Series Partial

Thus far, the student has practiced a progressive sequence of expanding the range upward, on exercises beginning on G4 and expanding to performing paradigms from OTS partial 7 to 13 in various rhythms in stepwise motion. To continue to progress in outward expansion, larger intervals of upward expansion should be practiced, however remaining in adjacent OTS partial motion. The following exercises are written in F horn (0) with a tonal basis of C4. Etudes gradually introduce overtone partials to overlap with what has already been practiced in exercises on C horn (1, 3), but with wider intervals in ascension. These exercises should still be transposed to other harmonic series, both higher and lower than F horn (0). Before these exercises are attempted, the teacher may choose to have students preliminarily perform aural exercises such as those suggested in Figure 3.14.

Fours, Fives, and Sixes (5A)

Horn A in this exercise exclusively practices slurring ascending and descending in OTS partials 4, 5, and 6. The intervals practiced are various forms of thirds, a distance slightly larger than the stepwise motion expounded upon in previous exercises. Oscillations are done in both quarter and eighth notes, especially in measure 3, which is very similar exercises outlined in Figure 3.14.

Stretching Higher (5B)

This exercise adds OTS partials 7 and 8 in F horn (0). The goal is for the transition between OTS 6, 7, and 8 would be more accomplished with little obstacles because of the practice done by transposing previous exercises upward in harmonic

series. The articulation is varied in this exercise during syncopation in measures one and three for Horn A and two for Horn B for clarity of rhythm.

Side-by-Side (5C)

Horn A in this etude begins with larger intervals to ascend upwards, and adds on OTS partial 9 in F horn (0). From measure three on, Horn A stays exclusively in stepwise motion among OTS partials 7, 8, and 9 of the F horn harmonic series. Horn B only leaps in greater intervals, practicing range ascension from OTS 3 to 7. The two horn parts must practice rhythmic independence in this etude.

Discordant Tones (5D)

OTS partial 10 is added in this etude. Both Horns A and B ascend to E5 in stepwise motion to practice this new added pitch. Horn B has a greater range than Horn A in this exercise, stretch from OTS 3 to 10. This etude practices endurance for the two players, in that there are no rests and is the longest exercise written thus far. Also, there is noted dissonance between the two horns. In measure two, three, and four, a tritone sounds on beat 3. A major second is formed between the two parts on beat 4 of measure six and beat 2 of measure seven. This allows both parts to practice their intonation and independence of pitch in dissonant intervals.

A Waltzing Bass Line (5E)

This exercise allows both parts to practice playing in different capacities of either an ostinato bass line or lyrical melody. Horn A begins on OTS 8 in F horn (0) and plays in stepwise motion on upper OTS partials 7-10. Horn B has an articulate waltz bass line on OTS partials 3-5, with accents on downbeats and lighter articulation on beats 2 and 3

of each measure. The parts are encouraged to switch after playing through to play another independent musical line.

Next-Door Fanfare (5F)

This exercise introduces OTS partials 11 and 12 in F horn (0) in an articulated style. These pitches are introduced in ascending sixteenth note patterns in stepwise motion. A dotted eighth-sixteenth rhythm is also introduced, and can be spatially observed where it lines up with the sixteenth notes in Horn A's part.

Exercises of Non-adjacent Harmonic Series Partial

The intervals of the adjacent harmonic series exercises practiced in the previous section can be applied to exercises on the C horn (1, 3) harmonic series. To accomplish the task of expanding and controlling pitches and intervals accurately in the high range exercises are written using non-adjacent OTS partials. Although not all of the partials are non-adjacent, each part has slurs and phrases where accuracy between non-adjacent OTS partials are involved.

These exercises not only rehearse the ability to be accurate in the high range of the horn with a lower harmonic series fingering, but work on the concept of making a true slur between notes. A slur is defined by Phil Farkas simply as a note that is approached by a previous note without being tongued.⁷⁰ In the previous studies, slurs have been done exclusively between adjacent OTS partials, meaning that only the two notes involved would possibly sound. However, when slurring across non-adjacent OTS

⁷⁰ Phil Farkas, *Art of French Horn Playing*, 46.

partials, notes between the two notes involved in the slur have the possibility of being present if the slur is done incorrectly. The slur must be done quickly enough to avoid intervening notes sounding.⁷¹ For example, if doing a slur on C horn (1, 3) from G4 to B4 (OTS partials 8 to 10), a true slur is one that avoids an A4 sounding between the two pitches.

These exercises rehearse both slurring and tonguing between non-adjacent OTS partials to gain better accuracy when a higher harmonic series fingering is applied to upper range pitches. Before these exercises are attempted, the teacher may choose to have students preliminarily perform aural exercises such as those suggested in Figures 3.15 and 3.16.

Glissing and Slurring (6A)

This exercise is a preliminary activity to practice true slurs on non-adjacent OTS partials. The etude expounds on increasingly large intervals from OTS 8-13. The construction of the etude shows two repetitions of the interval practiced. The first repeat indicates the player gliss between the two pitches to sound every partial between the two notes of the slur. The second repeat allows the player to attempt to achieve a true slur without any partials sounding between. It is important to gliss first to understand the speed that the lips must vibrate and how quickly the air must move to avoid unwanted pitches sounding in the slur. Practicing the gliss first allows the player to understand the physicality of the air column and embouchure coordinating to achieve a perfect slur.

⁷¹ Phil Farkas, *Art of French Horn Playing*, 47.

Skipping on Over (6B)

This exercise practices slurring between OTS partials 8, 9, and 10. These non-adjacent partials have only one pitch between the pitches that are slurred, so Horn A can practice slurring cleanly in a comfortable range over non-adjacent partials with only one adjacent pitch between the outer notes of the slur. This etude moves in mostly parallel motion with similar rhythm.

Hunting Overtones (6C)

This exercise roots in hunting horn tradition of ascending through OTS partials to signal the hunt. Bigger intervals are practiced in this etude, especially in Horn B. Horn B begins the exercise jumping from OTS 5-8, leaping over two OTS partials. For these large leaps, a way that may prove successful is to treat musical fragments as F1 did; glissing between specific intervals, measures, phrases, etc. can help attain a more clean slur than beginning the exercise immediately.

Leaps and Bounds (6D)

This exercise rehearses articulated OTS partial leaps with one partial between non-adjacent pitches. Both Horns A and B contain the same range of OTS 5-12. Rhythmically, both parts must be independent in the first four measures, and match articulation in the last four measures of the exercise.

Jumping in Thirds (6E)

This exercises' goals are identical to those of F4. The parts are required in this exercise to continue leaping between non-adjacent partials with one or two partials between. This etude also contains varying degrees of articulation practice. For example,

accents are given on the upbeats of measures two, six, and twelve and legato markings are attached to beat 2 of measures four, eight, twelve, and sixteen. Players need to be match all articulations shown in this etude.

Wide Range Waltz (6F)

This exercise is centered in a tonic of D minor, while being performed in C horn harmonic series. Care must be taken to observe all articulations in each part. Horn B is the ostinato waltz bass line, with a long downbeat and two more articulate upbeats of measures. Horn A is responsible for producing clean slurs on non-adjacent OTS partials on a lyrical melody line.

Lyrical Leaping (6G)

This exercise, also rooted in D minor, includes dissonance between Horns A and B in the large leaps. As well, the tonal center appears ambiguous until the final measure of settling in D minor. This lyrical etude of large leaps is for accuracy and centering of pitch, practicing for both horn parts that each person must be responsible for hearing the pitch they are playing and maintaining stability of tone.

Long Distance Echoes (6H)

This etude is a preliminary exercise for Horn B of exercise F9. The octave can be practiced in D minor on the C horn harmonic series by playing OTS partials 6-12. This exercise is a call and response study, practicing oscillation of the octave between OTS partials. If necessary, an application similar to that of F1 can frame this etude, where the measures are glissed initially, then slurred to avoid partials in between OTS partials 6 and 12.

Spanning Great Lengths (6I)

Horn B is the most difficult line of this etude, and the challenge comes with maintaining accuracy with this octave leap from OTS partial 6 to 12. Slurring from the previous exercise assists the player in knowing where the air column must sit for the D3 to be produced, and the tongue should not change the embouchure or air column from what was practiced. Both horn parts must pay attention to the various articulations shown in each part and not shy away from dissonance with the inclusion of OTS partial 13 in Horn A.

Paradigms of Adjacent and Non-adjacent Harmonic Series Partial with Changing Harmonic Series

The last set of exercises acts as a combination of fundamentals acquired in previous sections. Oscillations on all intervals and harmonic series are present in the following etudes. These exercises are also significantly longer in length than any previous etude, to challenge student's endurance. After a student has progressed past paradigms enumerating multiple harmonic series partials in stepwise motion, the teacher may choose to assign an etude from this section as a goal to work towards performing.

Horns A and B switch to different harmonic series within the exercises, to gain the experience of changing fingerings within music they would typically perform with a large ensemble. The harmonic series changes of fingering are indicated in the measure they are to be applied. Harmonic series shown between staves indicate that both lines are to play in that series. Indications of harmonic series above the highest staff apply only to Horn A, and harmonic series below the lowest staff apply only to Horn B. Throughout

exercises, harmonic series switch with increased frequency. Changing harmonic series frequently simulates the playing of music where a student would typically change to the most in-tune fingering per pitch. Before these exercises are attempted, the teacher may choose to have students preliminarily perform aural exercises such as those suggested in Figures 3.17 and 3.18.

Expanding Higher (7A)

This exercise is a call and response review of the range of the harmonic series expounded upon in the previous sections of etudes. This also serves as introduction to the range that will be covered in upcoming exercises. To gain maximum benefits, the student should strive for evenness of eighth note pulse when ascending and descending in the harmonic series. In this way, the air column and embouchure are working effectively to move about the harmonic series in stepwise motion, instead of encountering obstacles preventing tones from speaking in time.

Classical Melody (7B)

This melody and accompaniment resembles a style similar to something one might have heard in the classical era. Horn A begins in the familiar C harmonic series on stepwise motion to play the melody, while Horn B has an oscillating bass line similar to exercises in Figure 3.18. The melody of this exercise reaches the highest pitches in measures six and eighteen. In measure six, Horn A slurs upward to an F3 from C3 on Bb OTS, which is the typical fingering for these two pitches. Measure eighteen shows an ascent to G3 on the F OTS from C3, practiced in previous exercises. This exercise is the

first in which each part must change harmonic series within the music, and may require practice with the part to attain accuracy on the different tubing lengths of the horn.

A Bluesy Tune (7C)

This exercise is based on Horn A playing a melodic line over a 12-bar blues inspired bass line in Horn B. Horn B's line is repeated in different harmonic series throughout the exercise. Horn A's melody gradually increases in range, from beginning in F OTS and moving through Bb OTS and C OTS. This exercise is rhythmically more complex than what has come before, with the presence of a swung eighth note style. This can be practiced before the exercise begins, and how a style of swung eighth notes will influence the rhythm of this etude.

Soaring Theme (7D)

This etude focuses heavily on the ascent of a perfect fifth in Horn A's melody line. The concept of slurring perfectly across non-adjacent OTS partials is expounded on from the beginning of this etude. For practice in making these slurs, intervals such as the perfect fifth and perfect fourth in measures two and three should be isolated and rehearsed, by glissing between notes before expecting to slur cleanly. Horn B operates as an ostinato, rehearsing stepwise motion between adjacent OTS partials. The goal is for the ostinato eighth notes to consistently keep pulse without issues of air column and embouchure manipulation causing notes not to sound.

Caribbean Shanty (7E)

This exercise is complex rhythmically with syncopation in both Horns A and B, and concerning various articulations of the etude. Horn B's ostinato is kept in D horn

and features large interval leaps, such as the perfect fifth and perfect fourth leaps in measures four and five. A difficult feature of this exercise is both horn parts beginning measures fourteen and fifteen on OTS partial 12 in D horn. Practice to get this partial accurate could involve exercises ascending to partial 12 in several harmonic series, or glissing up to an E3 and rearticulating to teach the air column and embouchure what the pitch feels like.

Hoe-Down (7F)

This exercise is a close simulation to other music that students play where each pitch would typically have a different fingering. Because the harmonic series shifts often in this etude, a student has to be comfortable with the accuracy of what each pitch sounds and feels like. The range of this etude culminates in the final pitch of an F3. This exercise practices the endurance of maintaining an air column and embouchure that will allow a gliss up to F3 at the end of the etude will speak properly. Articulation is varied in this exercise and requires practice with the air column and embouchure to be accurate in every range expounded upon in this etude.

Flying Skyward (7G)

This exercise has the most rapid tonguing, largest range, and greatest length of the series of exercises. The ascending motif presented in measure nine moves stepwise to ascend to a G3 several times during this etude. Horn A performs on OTS partials 8 to 12 in the F harmonic series for most of this etude, presenting the challenge of maintaining endurance in the upper register. This etude is in an ABA form, where both A sections are articulate and the B section is lyrical. The separated articulation in the A section of this

etude is contrasted by the slurs in the B section. Focus should be on the slurs in the lyrical measures to achieve smooth transitions between notes on non-adjacent partial slurs. Measures forty-six and forty-seven include OTS partial 13 of A^b3, played on both F and G^b harmonic series. It should be the focus of Horn A to make each interval of the perfect fifth, minor sixth, and perfect fourth in measures forty-five, forty-six, and forty-seven, respectively, as in tune as possible on different harmonic series.

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APPENDIX A
HORN METHOD BOOKS

- Banco, G. *24 Klein Etüden für Waldhorn, Book 1 and 2*
- Beeler, Walter. *Play Away! For French Horn, Mellophone or Alto Horn*
- Beydon, J. O. *30 Études sur des Chanson Enfantines Book I*
- Ceccarossi, D. *Invito al Corno, vol. 1* Clevenger, Dale. *The Dale Clevenger French Horn Methods, Book I and II*
- Cottrell, J. *Studies in Ancient Irish Song*
- Davis, L. *Hornorama, Easy Horn Studies*
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- Eby, Walter. *Eby's Scientific Method for French Horn*
- Eerola, L. *30 Etydiä Käyrätorvelle*
- Eidson, Alzonzo. *Belwin, Inc. French Horn Method, Book One*
- Fearn, Ward O. *French Horn for Beginners*
- Freiberg, Gottfried. *Naturhorn-Schule.*
- Freund, Robert. *Waldhornschule für den Jungen Anfänger, Heft 1*
- Getchell, Robert W. *First Book of Practical Studies*
- Goldstein, Arthur. *A First Book of Etudes for French Horn*
- Goldstein, Arthur. *A First Book of Exercises for French Horn*
- Goldstein, Arthur. *A First Book of Solos for the French Horn*
- Gouse, Charles F. *Learn to Play the French Horn, Book 1*

Guerrera, Anthony. *French Horn Method Book I*

Henning, Oren A. *The Music Educator's Basic Method for the French Horn*

Herfurth, C. Paul and Stuart, Hugh. *Sounds of the Winds, French Horn, Book*

Herfurth, C. Paul and Vernon R. Miller. *A Tune-a-Day*

Hill, Douglas D. and Froseth, James O. *Introducing the French Horn*

Howe, Marvin C. *Method for French Horn*

Huber, R. *60 Leichte Etüden für Waldhorn*

Hulin, Éric. *15 Études à Notation Classique et Contemporaine*

Hulin, Éric. *20 Études Concertantes sur 5 Notes I and II*

Irwin, J. S. *85 Melodic and Rhythmic Studies for French Horn*

Joubert, C. *10 Etudes Dansantes por Cor*

Kinyon, John. *Basic Training Course for French Horn*

Kinyon, John. *Breeze-Easy Method for French Horn, Book I and II*

Kofeld, M. *Etüden & Duete für Horn*

Krol, B. *Naturhorn-Studien für das B-Waldhorn*

Krol, B. *Waldhorn-Studien für die Unterstufe*

Martin, J. *20 Études pour Cor en Fa*

McCoy, M. M. *46 Progressive Exercises for Low Horn Method*

Miller, J. *Simple Studies for Beginner Brass*

Molnar, J. *30 Etudes Faciles pour Cor*

Moore, Richard C., and Ettore, Eugene. *A French Horn Primer*

Mortimer, J. G. *Techincal & Melodic Studies, volume 1 and 2*

Pease, Donald. *Universal's Fundamental Method for the French Horn*

Petrie, Charles. *Pro Art French Horn Method, Book I*

Ployhar, James, and Weber, Fred. *French Horn Student, Level 1*

Ployhar, James, and Weber, Fred. *Studies and Melodies Etudes for French Horn, Level 1*

Pottag, Max P. and Nilo W. Hovey. *Pottag-Hovey Method for French Horn,*

Pulvinage, A. *Je commence en Do majeur Methode pour Cor, Trompette, Bugle*

Rattner, David. *Elementary Method for French Horn*

Robinson, William C. *An Illustrated Method for French Horn*

Runge, J. *100 Leichte Etüden für Waldhorn*

Skornicka, Joseph E. *Rubank Elementary Method French Horn*

Sternberger, M. *28 Etüden für Waldhorn*

Stolte, S. *Zwei Studien für Horn in F*

Ward, Norman. *Elementary School Beginner Mellophone (or French Horn)*

Ware, D. *Low Horn Flexibility Studies*

Weingärtner, F. *Etüden für Tiefes Horn, Book 1 and 2*

Yancich, Milan. *Method for French Horn, Book 1*

APPENDIX B
WIND BAND METHOD BOOKS

O'Reilly, John, and Williams, Mark. *Accent on Achievement*

Smith, Robert W., et al.. *Band Expressions*

Bullock, Jack, and Maiello, Anthony. *Belwin 21st Century Band Method*

Froseth, James O. *Do It! Play in Band*

Lautzenheiser, Tim, et al.. *Essential Elements 2000*

Grunow, Richard F., Gordon, Edwin E., Azzara, Christopher D., and Martin, Michael E..

Jump Right In

Sheldon, Deborah A., et al. *Measures of Success*

Probasco, James, Grable, David, Swearingen, James, and Meeks, James D.. *Now Go*

Home and Practice!

Sueta, Ed. *Premier Performance*

Sheldon, Robert, Boonshaft, Peter, Black, Dave, and Phillips, Bob. *Sound Innovations*

Pearson, Bruce, et al.. *Standard of Excellence*

Feldstein, Sandy, and Clark, Larry. *The Yamaha Advantage*